Appendix B

Air Quality
Report and Modeling
Supporting Information

Appendix B – Air Quality Supporting Information FSEIR

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Paramount Petroleum AltAir Renewable Fuels Project
Construction Emissions Analysis

October 2021

Prepared for: World Energy

By: Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
714-632-8521
www.envaudit.com

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REVISED RENEWABLE FUELS PROJECT

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1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

This air quality and greenhouse gas (GHG) technical report includes a comprehensive analysis of the criteria and GHG pollutants from the construction activities associated with the AltAir Paramount Refinery Renewable Fuels Project (Project).

1.2 FACILITY LOCATION

The Project is located at the existing Paramount Refinery located at 14700 Downey Avenue, Paramount, California (see Figure 1 and Figure 2). The City of Paramount is located east of the Los Angeles River and is approximately 16.5 miles southeast of downtown Los Angeles. The City of Paramount is bounded by the cities of South Gate, Downey, Bellflower, Long Beach, Compton, and Lynwood. The Refinery is bounded by Lakewood Boulevard, Somerset Boulevard, Downey Avenue, and Contreras Street.

The Project also includes modifications to operations at the Lakewood Tank Farm. The Lakewood Tank Farm is located at 2920 56th Way, Lakewood, California (see Figure 1). Existing storage and pipeline facilities at the company's off-site Lakewood Tank Farm will was previously used to store gas oil and will change service to jet fuel storage and blending. However, no construction activities are required, so no construction emissions would occur at the Lakewood Tank Farm.

1.3 LAND USE AND ZONING

The Refinery is located immediately west of the City of Bellflower municipal boundary lines, and approximately one-quarter mile south of the City of Downey boundary line. Regional access to the Refinery is provided by Interstates 605 and 710 which run north-south approximately two-and-one quarter miles east and west of the Refinery, respectively. State Route 91 runs east-west and is located approximately two miles south of the Refinery. Interstate 105 runs east-west and is located about three-quarters of a mile north of the Refinery (see Figure 1).

The Refinery accounts for slightly more than half of the total acreage within the Somerset Ranch Area of the 1990 Paramount General Plan. The Somerset Ranch Area of Paramount is designated as "Mixed Use" and includes a mix of residential, commercial, industrial, and public uses. The Refinery is zoned M-2, Heavy Manufacturing. The land use pattern varies widely in the Paramount area on a parcel by parcel basis and reflects an area in transition from a variety of older land uses (that include the Refinery) to newer development (including apartment houses and commercial land uses, e.g., grocery stores and a Walmart).

1.4 PROJECT DESCRIPTION

AltAir has been in partnership with Paramount Petroleum since 2013, when the Paramount Refinery began the process of converting portions of their oil refinery into renewable fuels production, under the Paramount Petroleum AltAir Renewable Fuels Project (Renewable Fuels

Project). Construction of the initial modifications to the Paramount Refinery to produce renewable fuels occurred between 2014 and 2015, and the facility began producing Renewable Fuels in 2016.

In 2018, World Energy purchased AltAir and the Paramount Refinery, and AltAir became a wholly-owned subsidiary of World Energy. Under World Energy, AltAir proposes to complete the conversion of the Paramount Refinery to manufacturing only renewable fuels.

AltAir is now proposing to revise the Renewable Fuels Project to include a more comprehensive conversion of the Refinery. The Revised Renewable Fuels Project will convert the remainder of the 50,000[1] barrel (42 gallons per barrel) per day crude oil refinery into a 25,000 barrels per day renewable fuels production facility. The Project consists of onsite modifications of the existing Renewable Fuels Project (referred to as Unit A), Sulfur Control Unit, loading/unloading rail and truck racks, storage tanks, and wastewater treatment facilities; onsite installation of a second Unit (referenced to as Unit B), a Pretreatment Unit, a Hydrogen Generating Unit (or hydrogen plant), a new Flare, a Hydrogen Sulfide Recovery Unit; and offsite construction for a new 3.6 mile natural gas pipeline from Lakewood Boulevard to Somerset Boulevard, and offsite maintenance activities of existing product pipelines performed to comply with California State Fire Marshall code. Maintenance may include the replacement of manual valves with motorized valves, the addition of pressure sensors, and minor repairs to pipelines. The product pipelines previously transported vacuum gas oil, diesel, and jet. Following completion of the Project, the product pipelines will transport renewable diesel and renewable jet.

[1] The refinery capacity was approximately 50,000 barrels per day when operating. A throughput limit condition was later imposed on the refinery operation.

2.0 EQUIPMENT AND SCHEDULE

Construction will be phased over a three-year period, with the modifications to Unit A to commence immediately following receipt of all project approvals. Modifications to Unit A will take approximately 16 months, where the first 8 months will occur at the beginning of the project and the remainder of the modifications to Unit A will occur over the last 8 months of the total construction period. Unit A will continue to operate while demolition activities are being completed. Demolition activities include relocation of loading and unloading racks and buildings, and removal of asphalt production facilities to make room for new equipment installation, including the Hydrogen Generation Unit and new equipment required for Unit B and the support units and utilities. Construction activities will overlap some of the demolition activities and then continue through completion. The Hydrogen Generation Unit will take approximately 35 months to complete. Unit B, which includes the Pretreatment Unit, will take approximately 29 months to complete. Therefore, full construction and commissioning activities will take place over an approximately 3-year timeframe. AltAir will modify existing equipment, demolish unused equipment that is located where new equipment will be placed, idle-in-place unused equipment, and install new equipment.

On-site construction equipment would be a source of combustion emissions. Any on-site equipment that could be electric powered was considered, and implemented to the maximum feasible. All electric powered equipment used for this project is not expected to emit any criteria pollutants or GHG emissions. Construction equipment may include backhoes, compressors, cranes, water trucks and welding machines (See Table 1 for complete list). Individual equipment is assumed to be operational no more than eight hours per shift during a normal construction day. However, construction workers are expected to be at the site, and generating emissions, for longer than eight hours per shift, including time for meals and breaks, organization meetings, and so forth; therefore, construction emissions may occur up to 10 hours per shift. The second year of construction may require two shifts per day. If this occurs, the construction schedule may be shortened overall, however, this analysis assumes the full 3-year schedule will occur regardless of using double shifts during the second year of construction.

Off-site construction associated with the installation of the natural gas pipeline is expected to take approximately eight (8) months. Off-site construction is less intense than onsite construction and will require less equipment. The construction of the proposed natural gas pipeline is expected to be completed prior to the completion of the hydrogen plant, therefore, occur concurrently with other construction at the Facility. Construction activities for the proposed pipeline will be under the authority of the Southern California Gas Company. Individual equipment is assumed to be operational no more than eight hours per shift during a normal construction day. However, construction workers are expected to be at the site, and generating emissions, for longer than eight hours per shift, including time for meals and breaks, organization meetings, and so forth; therefore, construction emissions may occur up to 10 hours per shift. As previously discussed, the second year of construction may require two shifts per day. This analysis assumes the full 3-year schedule will occur regardless of using double shifts during the second year of construction.

Off-site construction associated with maintenance to product pipelines is expected to take approximately three (3) months. Off-site construction is less intense than onsite construction and

will require less equipment. The maintenance of the product pipelines is expected to be concurrent with other construction at the Facility. Individual equipment is assumed to be operational no more than eight hours per shift during a normal construction day. However, construction workers are expected to be at the site, and generating emissions, for longer than eight hours per shift, including time for meals and breaks, organization meetings, and so forth; therefore, construction emissions may occur up to 10 hours per shift. Off-site construction is not anticipated to have double shifts at any time during the construction period.

TABLE 1
Equipment List

Equipment	
JD-210, Case 580 - Box Blades	1 - 24 KW Generator
Small Loader/Backhoe	Portable Light Plant
Cat 14 Grader	Road Broom
10 - 19 MT (SM EX 312 - 318)	Road Broom
20 TO 25 MT (CAT 320,321)	Cat IT28, 928, 930, 938 Loader
30 TO 35 MT (CAT 328,329)	Cat 966, JA744, WA500, L150 Loader
40 - 48" Single Drum / Smooth / Vibro	Skid Steer-Wheeled
78 - 84" Single Drum / Combo / Vibro	Skid Steer - Track
Walk Behind Roller (2-Drum)	Rough Terrain Scissor Lift
Plate Compactor	40' Manlift
Rough Terrain Crane 70-79 Ton	40' Manlift
Rough Terrain Crane 80-89 Ton	60' Manlift
Rough Terrain Crane 90-99 Ton	80' Manlift
Rough Terrain Crane 100-110 Ton	120' Manlift
Carry Deck Crane <15 Ton	135' Manlift
Carry Deck Crane >15 Ton	150' Manlift
Crane 130-150 Ton	Forklift
Crane 265 Ton	30,000 lb and Greater Straight Mast
175-225 Ton Lattice Crawler Crane	30,000 lb and Greater Straight Mast
230-250 Ton Lattice Crawler Crane	6,000 - 8,000 lb Extendable
300-330 Ton Lattice Crawler Crane	9,000 - 10,000 lb Extendable
601- 800 Ton Lattice Crawler Crane	9,000 - 10,000 lb Extendable
185 CFM Air Compressor	Fusion Mach 2"Ips-8"Ips
250 - 300 CFM Air Compressor	Fusion Mach 4"Ips-12"Ips
375 CFM Air Compressor	Fusion Mach 6"Ips-18"Ips
1600 CFM Air Compressor	Fusion Mach 12"Ips-36"Ips
300 - 350 Amp Diesel Welder	Fusion Machine >36" Ips

3.0 CRITERIA AIR POLLUTANT EMISSIONS

Criteria air pollutants are those pollutants for which the federal and state governments have established ambient air quality standards or criteria for outdoor concentrations in order to protect public health with a margin of safety. Criteria air pollutants include carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter less than 10 micron (PM10), and particulate matter less than 2.5 micron (PM2.5). National Ambient Air Quality Standards (NAAQS) were first authorized by the federal Clean Air Act of 1970 and have been set by the U.S. Environmental Protection Agency (U.S. EPA). California Ambient Air Quality Standards (CAAQS) were authorized by the state legislature in 1967 and have been set by the California Air Resources Board (CARB). Air quality of a region is considered to be in attainment of the standards if the measured concentrations of air pollutants are maintained at levels equal to or less than the standards. Both the NAAQS and the CAAQS are periodically revisited and revised based on the most recent scientific information.

3.1 CRITERIA POLLUTANT EMISSION ESTIMATES METHODOLOGY

Emission factors for off-road construction equipment were taken from the CARB OFFROAD 2017 Inventory Model (http://www.arb.ca.gov/msei/categories.htm) and adjusted for Tier 4 engine emission factors for CO, NOx, and PM, for all onsite equipment. All offsite (natural gas pipeline and pipeline maintenance) equipment is based on default aggregate fleet mix. The Tier 4 adjustments are considered part of the project, because the contracted construction vendors own the equipment and will be using them onsite. Mitigated emission factors for onsite construction equipment were based on the *Impact Assessment of Renewable Diesel on Exhaust Emissions from Compression Ignition Engines* (CARB, 2015) emission factor adjustments for off-road vehicles with 100 percent renewable diesel. As previously discussed, the construction of the proposed pipeline is under the authority of Southern California Gas, therefore, no guarantee of the use of Tier 4 equipment or renewable diesel can be assured, and was not considered. Further, pipeline maintenance may be performed by a third party, therefore, no guarantee of the use of Tier 4 equipment or renewable diesel can be assured, and was not considered.

Vehicle emissions include construction worker vehicles, pick-up trucks, flatbed trucks, dump trucks, water trucks, semi tractors, concrete trucks, and delivery trucks. Primary emissions generated would include combustion emissions from engines during idling and while operating.

On-road construction emissions include emissions construction worker vehicles, pick-up trucks, flatbed trucks, dump trucks, water trucks, semi tractors, concrete trucks, and delivery trucks. Primary emissions generated would include combustion emissions from engines during idling and while operating. Emissions from on-road vehicles were calculated using the EMFAC2017 emission factors available on the CARB Emissions Inventory webpage (http://www.arb.ca.gov/msei/categories.htm).

Emission from construction worker vehicles traveling to and from the work site assumes a one-way distance of 14.7 miles (CAPCOA, 2017) to and from work each day, making two one-way trips per day with the average vehicle ridership assumed to be one person per vehicle, i.e., most

workers drive alone. All cars and pickup trucks used for short trips within and near the Refinery to travel between equipment storage and the Refinery units are assumed to travel five miles or less per trip.

Medium- and heavy-duty diesel trucks include dump trucks, water trucks, and delivery trucks. Heavy heavy-duty semi-trucks and concrete trucks were also included in the project construction analysis. Primary emissions generated would include exhaust emissions from diesel engines while operating. Emissions from trucks (both delivery and heavy-duty) are also calculated using the EMFAC2017 on-road emission factors.

Fugitive dust sources include grading, trenching, wind erosion, and truck filling/dumping at the site to construct necessary foundations. During construction activities, water would be applied as a dust suppressant in the construction area during grading, trenching, and earth-moving activities to control or reduce fugitive dust emissions pursuant to South Coast Air Quality Management District (SCAQMD) Rule 403. Application of water reduces PM emissions by a factor of up to 61 percent (SCAQMD, 2007). Fugitive dust suppression, often using water, is a standard operating practice and is one method of complying with SCAQMD Rule 403. Estimated peak controlled PM10 and PM2.5 emissions during peak construction activities for fugitive dust sources were calculated using the U.S. EPA's AP-42, Section 11.

Vehicles and trucks traveling on paved and unpaved roads are also a source of fugitive emissions during the construction period. Fugitive dust emissions were also calculated for on-site vehicles and trucks. The fugitive emissions for trucks assume delivery trucks would travel on paved roads and water trucks and off-road construction equipment would travel on unpaved roads. Emissions of dust caused by travel on paved roads were calculated using the U.S. EPA's, AP-42, Section 13.2.1 emission factor for travel on paved roads. Emissions of dust caused by travel on unpaved roads were calculated using the U.S. EPA's, AP-42, Section 13.2.2 emission factor for travel on unpaved roads. CARB's Methodology 7.9 was used to determine the appropriate silt loading for calculating fugitive dust emissions.

3.2 CRITERIA POLLUTANT EMISSIONS SUMMARY

The emission estimates for onsite construction are based on the equipment list and schedule provided by AltAir Paramount and provided in Attachment A. The construction of the proposed pipeline is based on the equipment list and schedule provided by Southern California Gas and provided in Attachment B. The emission estimates for offsite maintenance activities are based on the equipment list and schedule provided by AltAir Paramount and provided in Attachment C. As shown in Table 1, construction emissions assumptions include the use of cranes, welders, generators, pumps, forklifts, loader/backhoes, compressors, manlifts, etc. Peak daily emissions for each pollutant could vary from month to month; however, the peak daily emissions are presented regardless of the month they occurred. That is to say, if the peak CO emissions occurred in Month 1 and the peak VOC emission occurred in Month 2, both peak emissions are shown in Table 2. Construction emissions (i.e., unmitigated) exceed the SCAQMD California Environmental Quality Act (CEQA) significance thresholds; therefore, emissions were also calculated using renewable diesel as described in Section 3.1. Detailed construction emissions are presented in Attachment A.

TABLE 2

Peak Daily Construction Emissions (lb/day)

Pollutant	Unmitigated Emissions[(1)]	Mitigated Emissions[(2)]
VOC	53.3	52.3
CO	261.3	239.9
NOx	402.0	394.4
SOx	1.6	1.4
PM10	138.6	138.0
PM2.5	38.1	37.5

(1) Peak months expected to occur in Year 2 Month 3 for VOC, SOx, PM10, and PM2.5, Year 3 Month 4 for CO, and Year 1, Month 11 for NOx (see Attachment A, Table A-1).

(2) Peak months expected to occur in Year 2 Month 3 for VOC, SOx, PM10, and PM2.5, Year 3 Month 4 for CO, and Year 1, Month 11 for NOx (see Attachment A, Table A-1).

4.0 GREENHOUSE GASES

Global climate change refers to changes in average climatic conditions on the earth as a whole, including: temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in the average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of GHGs in the atmosphere. The six major GHGs identified by the Kyoto Protocol are CO_2, methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), haloalkanes (HFCs), and perfluorocarbons (PFCs). GHG emissions are quantified using a persistence weighting method. The standard unit of measuring GHG emissions is carbon dioxide equivalent (CO2e). CO2e expresses the impact of each different GHG emissions in terms of the amount of CO_2 that would create the equivalent amount of warming.

The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect."

Potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and degradation of air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (i.e., heat rash and heat stroke). In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other disease carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. Drought in some areas may increase, which would decrease water and food availability. Global climate change may also exacerbate air quality problems from increased frequency of exceeding criteria pollutant ambient air quality standards.

Unlike criteria pollutants, GHG emissions are monitored and regulated based on annual emissions. Further, because GHGs are a global issue, no single source or project can create a significant impact by itself, so GHG emissions are analyzed to determine whether there is a cumulatively considerable contribution from the incremental contribution from the Project.

Assembly Bill 32 – California Global Warming Solutions Act of 2006 AB 32 was signed into law by then-governor Arnold Schwarzenegger on September 27, 2006 and it is the first law to limit GHG emissions at the state level. The Act directs the State to reduce California emissions of GHG to 1990 levels by 2020. It instructs CARB to establish a program of regulatory and market mechanisms to achieve GHG reductions and to implement a mandatory GHG reporting and verification program. AB 32 required CARB to finalize GHG emission limits and reduction measures by January 1, 2011 and to implement them by January 1, 2012.

On October 20, 2011, CARB adopted the final cap-and-trade regulation. The program started on January 1, 2012, with an enforceable compliance obligation beginning with the 2013 GHG emissions. The regulation includes an enforceable GHG cap that will decline over time.

Facilities that import or generate electricity and transportation fuels are regulated under CARB's cap-and-trade program. That is to say, CARB requires GHG emissions credits at these facilities equal to the emissions allowed under the cap, therefore, GHG emissions from electricity and transportation fuels are considered accounted for and mitigated."

In July 2017, Governor Brown signed AB 398 to reauthorize and extend the Cap and Trade program through December 31, 2030. The legislation also amended the program by strengthening Legislative oversight of the program, placing limits on the allocation and use of emission offset credits, creating a Compliance Offsets Protocol Task Force to ensure that the program provides direct environmental benefits within California, and directing CARB to establish parameters for pricing of emission credits. In addition, AB 398 also prohibits local air quality districts from adopting or implementing regulations to reduce carbon dioxide emissions from any stationary source of emissions that is subject to the provisions of the Cap and Trade program.

4.1 GHG EMISSION ESTIMATES METHODOLOGY

Emission factors for construction equipment were taken from the CARB OFFROAD 2017 Inventory Model (http://www.arb.ca.gov/msei/categories.htm). Vehicle emissions include construction worker vehicles, pick-up trucks, flatbed trucks, dump trucks, water trucks, semi tractors, concrete trucks, and delivery trucks. Primary emissions generated would include combustion emissions from engines during idling and while operating.

Construction emissions include emissions from construction worker vehicles traveling to and from the work site. Each worker commute vehicle is assumed to travel a one-way distance of 14.7 miles (CAPCOA, 2017) to and from work each day, making two one-way trips per day with the average vehicle ridership assumed to be one per vehicle, i.e., most workers drive alone. Emissions from employee vehicles were calculated using the EMFAC2017 emission factors available on the CARB Emissions Inventory webpage (http://www.arb.ca.gov/msei/categories.htm).

All cars and pickup trucks used for short trips within and near the Refinery to travel between equipment storage and the Refinery units are assumed to travel five miles or less per trip.

Medium- and heavy-duty diesel trucks include dump trucks, water trucks, and delivery trucks. Heavy heavy-duty semi-trucks and concrete trucks were also included in the project construction analysis. Primary emissions generated would include exhaust emissions from diesel engines while operating. Emissions from trucks (both delivery and heavy-duty) are calculated using the EMFAC2017 on-road emission factors.

4.2 GHG EMISSIONS SUMMARY

The construction emission estimates are based on the equipment list and schedule provided by AltAir Paramount and provided in Attachment A. As shown in Table 1, construction emissions assumptions include the use of cranes, welders, generators, pumps, forklifts, loader/backhoes, compressors, and manlifts. Total and amortized GHG emissions from construction related

activities are shown in Table 3. The expected lifetime of a project is 30 years, therefore, the total construction emissions are amortized over 30 years in order to compare the annual construction GHG emissions to the CEQA annual GHG threshold. Detailed construction emissions are presented in Attachment A.

TABLE 3
Total Construction GHG Emissions

Pollutant	Unmitigated Emissions	Mitigated Emissions
Total CO2e (MT)	29,315	28,227
Amortized CO2e (MT/yr)	977	941

5.0 ODORS

Although offensive odors rarely cause any physical harm, they can be unpleasant and lead to considerable distress among the public. This distress may often generate citizen complaints to local governments and air districts. Any project with the potential to frequently expose the public to objectionable odors would be deemed as having a significant impact.

According to CARB's Air Quality and Land Use Handbook, land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing (CARB 2005). Odor impacts on residential areas and other sensitive receptors, such as hospitals, daycare centers, and schools, warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites, and commercial areas.

Potential odor emitters during construction activities include diesel exhaust. However, construction related operations near existing receptors would be temporary in nature, and construction activities would not be expected to result in nuisance odors that would violate any local ordinances.

6.0 SIGNIFICANCE THRESHOLD

A threshold of significance is an identifiable quantitative, qualitative, or performance level of a particular environmental effect. Projects that do not exceed the significance threshold for the effect under evaluation normally will be determined to be less than significant. Exceeding the significance thresholds means the effect will normally be determined to be significant by the lead agency (CEQA Guidelines Section 15064(a)).

To determine whether or not air quality impacts from the Project are significant, impacts are evaluated and compared to the significance criteria in Table 4. If impacts equal or exceed any of the criteria in Table 4, they will be considered significant.

TABLE 4
SCAQMD Criteria Pollutant and GHG Significance Thresholds

Mass Daily Thresholds[(a)]	
Pollutant	**Construction**
VOC	75 lb/day
CO	550 lb/day
NOx	100 lb/day
SOx	150 lb/day
PM10	150 lb/day
PM2.5	55 lb/day
GHG Thresholds[(b)]	
GHG	10,000MT/yr CO_2e

(a) SCAQMD CEQA Handbook (SCAQMD, 1993)
(b) Interim CEQA GHG Significance Threshold (SCAQMD, 2008) for industrial projects.

The SCAQMD makes significance determinations for construction impacts based on the maximum or peak daily emissions during the construction period, which provides a "worst-case" analysis of the construction emissions. Construction activities associated with the Project would result in emissions of CO, VOC, NOx, SOx, PM10, PM2.5, and GHGs. Table 5 summarizes the comparison of the unmitigated Project construction emissions to the SCAQMD significance thresholds. Since the full quantity of Tier 4 off-road diesel equipment may not be available for such a large scale project, only unmitigated emissions are compared to the CEQA thresholds to present a conservative analysis.

TABLE 5
Comparison of Project Construction Emissions to CEQA Thresholds
(lb/day)

Scenario	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT/yr)
Peak Daily Emissions	53.3	261.3	402.0	1.6	138.6	38.1	977
SCAQMD Threshold	75	550	100	150	150	150	10,000
Significant?	**NO**	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

The South Coast AQMD also makes significance determinations for local impacts. Localized significance thresholds (LSTs) represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The peak onsite construction emissions were modeled with AERMOD and compared to LSTs. Table 6 summarizes the maximum results of the LST analysis from onsite construction regardless of single or double shift designations. Both the single and double shifts were modeled because the night shift will operate at approximately 25 percent of the day shift. This would mean that 1-hour averaging times may be diluted if peak day emissions were selected using double shift operations. Therefore, the two construction options were modeled separately to present a conservative analysis. As expected, the peak concentrations for 1-hour and 8-hour averaging times occur during single shift operations, while peak concentrations for longer averaging time occur during the double shift period. The emissions from offsite construction activities were all below the LST screening thresholds (See Attachments B and C). The complete LST analysis for onsite single shift construction activities is presented in Attachment D. The complete LST analysis for onsite double shift construction activities is presented in Attachment E.

TABLE 6
LST Analysis Summary

Criteria Pollutant	Averaging Period	Single or Double Shift	Max Modeled GLC Conc. ($\mu g/m^3$)	Background GLC Conc. ($\mu g/m^3$)	Total GLC Conc. ($\mu g/m^3$)	Most Stringent Air Quality Standard ($\mu g/m^3$)	Significant
CO	1-hour	Single	519.7	6,984.5	7,504.2	23,000	NO
	8-hour	Single	188.0	5,267.0	5,455.0	10,000	NO
NO_2	1-hour	Single	269.2	186.3	455.5	339	YES
	1-hour (Federal)	Single	248.3	125.6	373.9	188	YES
	Annual	Double	14.0	30.3	44.3	57	NO
PM10	24-hour	Double	6.9	--	--	10.4	NO
	Annual	Double	0.7	--	--	1	NO
PM2.5	24-hour	Double	2.8	--	--	10.4	NO
	Annual	Double	0.5	--	--	1	NO

7.0 CONCLUSIONS

Based on the air quality and GHG emissions presented in this analysis, the unmitigated emissions from construction activities related to the Project are less than the applicable SCAQMD significance thresholds for VOC, CO, SOx, PM10, PM2.5, and GHG. However, the emissions from unmitigated construction activities related to the Project are greater than the applicable SCAQMD significance thresholds for NOx. Further, the emission impacts from the Project are expected to be greater than both state and federal air quality standards for 1-hour and annual NO_2 during the peak of on-site construction. Therefore, the emissions from construction activities related to the Project are expected to be significant. Imposing mitigation may reduce the overall impact from emissions but NOx emissions are expected to remain above the significance threshold assuming 100 percent renewable diesel is available.

8.0 REFERENCES

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ATTACHMENT A

CONSTRUCTION EMISSIONS CALCULATIONS

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Attachment A
Alt Air Renewable Fuels Project
Total Project Component
Table A1 - Construction Emission Summary

	Year 1												Year 2												Year 3											
Emissions from Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	9.90	10.34	11.14	11.14	10.74	10.14	10.69	10.73	12.49	13.52	14.22	20.98	25.59	29.15	29.07	28.23	25.65	25.78	19.84	20.44	22.74	23.99	23.53	24.27	18.28	28.11	28.73	28.57	27.71	27.81	25.09	24.20	21.53	16.85	15.61	0.00
CO (lb/day)	64.14	69.79	75.20	77.54	75.55	72.57	78.06	78.84	91.36	102.30	105.18	133.96	155.41	167.75	167.16	170.39	148.55	157.24	142.78	145.43	163.06	171.33	169.23	174.58	134.43	169.34	174.00	172.86	165.83	167.69	160.07	152.57	132.02	119.49	102.30	0.00
NOx (lb/day)	35.30	39.76	45.10	45.37	43.78	41.40	43.50	44.23	49.71	55.19	56.71	68.58	72.95	75.97	77.64	80.16	72.71	79.58	75.39	78.70	98.62	105.40	105.84	109.89	84.92	105.20	107.18	106.89	102.60	104.06	101.72	98.48	81.53	78.50	69.14	0.00
SOx (lb/day)	0.10	0.11	0.12	0.12	0.12	0.11	0.12	0.12	0.14	0.16	0.16	0.19	0.20	0.21	0.21	0.23	0.20	0.22	0.22	0.23	0.27	0.29	0.29	0.30	0.23	0.28	0.28	0.28	0.27	0.27	0.27	0.25	0.21	0.21	0.18	0.00
PM10 (lb/day)	0.92	1.01	1.21	1.22	1.14	1.03	1.13	1.14	1.36	1.57	1.60	1.93	2.02	2.09	2.06	2.29	2.01	2.35	2.39	2.55	2.98	3.25	3.26	3.39	2.60	3.09	3.19	3.21	3.03	3.05	3.02	2.86	2.24	2.13	1.89	0.00
PM2.5 (lb/day)	0.91	1.00	1.19	1.21	1.13	1.01	1.12	1.13	1.34	1.56	1.58	1.91	2.00	2.08	2.05	2.27	2.00	2.34	2.37	2.53	2.96	3.22	3.23	3.36	2.55	3.04	3.14	3.16	2.98	3.00	2.97	2.81	2.20	2.07	1.84	0.00
CO_2 (lb/day)	9108.56	10190.89	11452.69	11670.31	11078.29	10190.26	11108.40	11255.57	13323.10	15535.90	15813.13	18613.65	20075.45	20581.34	20568.94	22204.10	19232.48	21728.97	21960.04	22992.49	26935.95	29150.90	29046.99	30351.03	23590.84	27542.85	28397.27	28411.05	26917.05	27231.58	27169.08	25806.09	20555.93	21903.84	18992.20	0.00
CO_2 (tonnes/yr)												1524.16												2906.94												2822.12

	Year 1												Year 2												Year 3											
Emission from Trips - Subtotal	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	1.72	3.62	3.92	5.16	5.94	7.36	9.08	7.44	9.83	10.39	10.36	7.34	6.39	5.94	7.61	6.36	3.57	1.58	1.54	1.97	1.57	1.26	1.35	1.10	0.70	0.68	0.70	0.58	0.38	0.31	0.32	0.34	0.30	0.24	0.14	0.05
CO (lb/day)	30.27	57.02	51.86	45.84	43.69	50.44	81.31	71.59	86.92	91.88	88.88	63.00	67.21	71.85	86.28	82.17	63.13	54.44	57.09	73.01	71.70	60.38	64.77	52.33	37.16	36.20	37.05	30.80	20.22	16.07	16.98	17.79	15.63	12.26	7.30	2.44
NOx (lb/day)	44.10	95.25	111.29	165.98	197.78	248.36	293.51	237.23	318.56	336.84	337.17	238.61	276.95	248.14	324.40	260.97	129.50	32.91	28.45	36.67	16.69	10.69	11.06	9.16	5.98	5.81	5.51	4.66	3.22	2.66	2.74	2.89	2.53	2.11	1.37	0.61
SOx (lb/day)	0.23	0.46	0.50	0.64	0.73	0.90	1.13	0.93	1.23	1.30	1.29	0.91	1.18	1.10	1.41	1.18	0.66	0.30	0.29	0.37	0.30	0.24	0.26	0.21	0.16	0.15	0.15	0.13	0.09	0.07	0.07	0.08	0.07	0.05	0.03	0.01
PM10 (lb/day)	16.90	35.28	39.21	54.19	63.06	78.59	95.93	78.36	103.93	109.89	109.56	77.53	102.75	93.86	121.48	99.71	52.96	19.34	18.25	23.43	16.56	12.83	13.62	11.09	8.64	8.40	8.40	7.04	4.71	3.80	3.97	4.17	3.67	2.94	1.82	0.66
Exhaust PM (lb/day)	2.86	5.70	5.93	7.29	8.13	9.99	12.96	10.78	13.99	14.79	14.64	10.35	11.91	11.34	14.40	12.31	7.38	4.09	4.12	5.28	4.62	3.79	4.06	3.28	2.52	2.46	2.50	2.08	1.37	1.09	1.15	1.21	1.06	0.83	0.50	0.17
Fugitive PM (lb/day)	14.04	29.58	33.28	46.90	54.93	68.60	82.98	67.58	89.94	95.10	94.92	67.18	90.84	82.52	107.09	87.40	45.58	15.24	14.13	18.15	11.94	9.03	9.56	7.80	6.12	5.94	5.89	4.95	3.34	2.71	2.82	2.97	2.61	2.11	1.32	0.49
PM2.5 (lb/day)	5.25	10.73	11.59	15.27	17.47	21.66	27.06	22.27	29.28	30.96	30.77	21.77	27.35	25.37	32.60	27.17	15.13	6.69	6.52	8.36	6.65	5.33	5.68	4.61	3.56	3.47	3.51	2.92	1.94	1.55	1.63	1.71	1.50	1.19	0.72	0.26
Exhaust PM (lb/day)	2.86	5.70	5.93	7.29	8.13	9.99	12.96	10.78	13.99	14.79	14.64	10.35	11.91	11.34	14.40	12.31	7.38	4.09	4.12	5.28	4.62	3.79	4.06	3.28	2.52	2.46	2.50	2.08	1.37	1.09	1.15	1.21	1.06	0.83	0.50	0.17
Fugitive PM (lb/day)	2.39	5.03	5.66	7.97	9.34	11.66	14.11	11.49	15.29	16.17	16.14	11.42	15.44	14.03	18.20	14.86	7.75	2.59	2.40	3.09	2.03	1.54	1.63	1.33	1.04	1.01	1.00	0.84	0.57	0.46	0.48	0.50	0.44	0.36	0.22	0.08
CO_2 (lb/day)	25075.42	51413.99	55405.89	72698.69	83148.51	103016.13	128711.62	105909.98	139269.90	147252.15	146394.39	103617.76	135182.17	125095.36	160829.76	133763.98	74083.97	31827.97	30906.91	39628.62	31082.15	24820.90	26456.07	21479.38	16169.18	15717.28	15848.78	13258.97	8821.72	7087.12	7438.90	7803.40	6863.65	5468.12	3345.63	1166.54

	Year 1												Year 2												Year 3											
Emission from Trips - Onsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.03	0.06	0.05	0.05	0.05	0.06	0.08	0.06	0.08	0.08	0.08	0.06	0.05	0.06	0.07	0.06	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	0.39	1.00	0.86	0.49	0.43	0.43	0.55	0.50	0.58	0.62	0.65	0.55	0.64	0.69	0.69	0.69	0.63	0.34	0.33	0.37	0.35	0.32	0.31	0.28	0.23	0.18	0.18	0.20	0.18	0.17	0.17	0.17	0.16	0.15	0.12	0.01
NOx (lb/day)	0.67	1.29	1.29	1.40	1.53	1.82	2.48	2.11	2.62	2.77	2.75	1.98	2.21	2.24	2.76	2.39	1.50	1.00	1.00	1.22	1.09	0.91	0.95	0.78	0.45	0.45	0.44	0.36	0.25	0.21	0.21	0.23	0.19	0.17	0.10	0.05
SOx (lb/day)	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.24	0.50	0.48	0.47	0.50	0.58	0.79	0.68	0.83	0.88	0.88	0.65	0.84	0.86	1.03	0.91	0.60	0.39	0.39	0.47	0.42	0.35	0.37	0.30	0.24	0.23	0.23	0.20	0.15	0.12	0.12	0.13	0.11	0.10	0.06	0.03
Exhaust PM (lb/day)	0.04	0.09	0.08	0.07	0.07	0.08	0.10	0.09	0.11	0.11	0.11	0.09	0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Fugitive PM (lb/day)	0.21	0.42	0.41	0.40	0.43	0.51	0.69	0.59	0.73	0.77	0.77	0.56	0.74	0.75	0.91	0.80	0.53	0.34	0.34	0.41	0.37	0.31	0.32	0.27	0.21	0.20	0.20	0.17	0.13	0.11	0.11	0.11	0.10	0.09	0.05	0.02
PM2.5 (lb/day)	0.07	0.16	0.15	0.13	0.14	0.16	0.22	0.19	0.23	0.24	0.25	0.18	0.23	0.23	0.27	0.24	0.17	0.11	0.10	0.13	0.11	0.10	0.10	0.08	0.07	0.06	0.06	0.06	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.01
Exhaust PM (lb/day)	0.04	0.09	0.08	0.07	0.07	0.08	0.10	0.09	0.11	0.11	0.11	0.09	0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Fugitive PM (lb/day)	0.03	0.07	0.07	0.07	0.07	0.09	0.12	0.10	0.12	0.13	0.13	0.10	0.13	0.13	0.15	0.14	0.09	0.06	0.06	0.07	0.06	0.05	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00
CO_2 (lb/day)	354.49	764.27	717.55	643.96	670.77	770.74	1042.66	895.82	1101.09	1167.31	1169.86	866.70	1122.09	1151.63	1359.35	1210.37	836.41	524.51	520.02	624.26	564.41	481.45	496.90	414.86	323.05	302.29	300.11	268.35	201.07	175.89	173.72	185.02	159.84	145.08	96.45	31.47

	Year 1												Year 2												Year 3											
Emission from Trips - Offsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	1.70	3.57	3.87	5.12	5.89	7.31	9.00	7.38	9.75	10.31	10.27	7.28	6.34	5.88	7.55	6.30	3.53	1.55	1.52	1.94	1.55	1.24	1.32	1.08	0.70	0.68	0.69	0.58	0.38	0.30	0.32	0.33	0.29	0.23	0.14	0.05
CO (lb/day)	29.88	56.01	51.00	45.36	43.26	50.01	80.76	71.09	86.34	91.26	88.23	62.45	66.57	71.16	85.59	81.48	62.49	54.10	56.76	72.64	71.35	60.07	64.46	52.05	36.93	36.02	36.87	30.59	20.04	15.90	16.81	17.63	15.47	12.11	7.18	2.43
NOx (lb/day)	43.43	93.96	110.01	164.57	196.25	246.55	291.03	235.13	315.94	334.07	334.42	236.63	274.74	245.90	321.64	258.58	127.99	31.91	27.45	35.45	15.60	9.78	10.10	8.38	5.53	5.37	5.07	4.29	2.96	2.45	2.53	2.66	2.34	1.95	1.28	0.56
SOx (lb/day)	0.22	0.46	0.49	0.63	0.72	0.89	1.12	0.93	1.22	1.29	1.28	0.90	1.17	1.09	1.40	1.17	0.65	0.29	0.29	0.37	0.30	0.24	0.25	0.21	0.15	0.15	0.15	0.13	0.08	0.07	0.07	0.07	0.07	0.05	0.03	0.01
PM10 (lb/day)	16.66	34.78	38.72	53.72	62.57	78.01	95.14	77.68	103.10	109.01	108.67	76.89	101.91	93.00	120.45	98.80	52.36	18.95	17.86	22.96	16.14	12.47	13.26	10.78	8.40	8.17	8.17	6.84	4.56	3.67	3.85	4.04	3.56	2.84	1.75	0.64
Exhaust PM (lb/day)	2.82	5.62	5.85	7.23	8.07	9.92	12.85	10.69	13.88	14.68	14.52	10.27	11.81	11.23	14.28	12.20	7.30	4.05	4.07	5.22	4.57	3.75	4.01	3.25	2.49	2.43	2.48	2.05	1.35	1.07	1.13	1.19	1.04	0.82	0.49	0.17
Fugitive PM (lb/day)	13.84	29.16	32.87	46.50	54.50	68.09	82.29	66.99	89.21	94.33	94.15	66.62	90.10	81.77	106.18	86.60	45.05	14.90	13.79	17.74	11.57	8.72	9.24	7.54	5.90	5.73	5.69	4.78	3.21	2.60	2.72	2.85	2.51	2.02	1.27	0.46
PM2.5 (lb/day)	5.18	10.57	11.44	15.13	17.33	21.49	26.84	22.08	29.05	30.71	30.53	21.59	27.13	25.13	32.33	26.92	14.96	6.58	6.42	8.24	6.54	5.23	5.58	4.53	3.50	3.41	3.44	2.87	1.90	1.51	1.59	1.67	1.47	1.16	0.70	0.25
Exhaust PM (lb/day)	2.82	5.62	5.85	7.23	8.07	9.92	12.85	10.69	13.88	14.68	14.52	10.27	11.81	11.23	14.28	12.20	7.30	4.05	4.07	5.22	4.57	3.75	4.01	3.25	2.49	2.43	2.48	2.05	1.35	1.07	1.13	1.19	1.04	0.82	0.49	0.17
Fugitive PM (lb/day)	2.35	4.96	5.59	7.90	9.26	11.58	13.99	11.39	15.17	16.04	16.01	11.33	15.32	13.90	18.05	14.72	7.66	2.53	2.34	3.02	1.97	1.48	1.57	1.28	1.00	0.97	0.97	0.81	0.55	0.44	0.46	0.48	0.43	0.34	0.22	0.08
CO_2 (lb/day)	24720.93	50649.73	54688.34	72054.72	82477.74	102245.39	127668.96	105014.16	138168.80	146084.84	145224.53	102751.06	134060.08	123943.73	159470.42	132553.61	73247.55	31303.45	30386.89	39004.37	30517.74	24339.45	25959.17	21064.52	15846.13	15414.99	15548.67	12990.61	8620.65	6911.22	7265.18	7618.38	6703.81	5323.04	3249.18	1135.07

	Year 1												Year 2												Year 3											
Fugitive Earthmoving PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1												Year 2												Year 3											
Offroad Fugitive PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	0.00
PM2.5 (lb/day)[1][2]	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	0.00

	Year 1												Year 2												Year 3											
Paint	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.00	0.00	0.00	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	0.00	0.00

		Year 1												Year 2												Year 3											
Total Facility Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.6	14.0	15.1	32.9	33.3	34.1	36.4	34.8	38.9	40.5	41.2	44.9	48.6	51.7	**53.3**	51.2	45.8	44.0	38.0	39.0	40.9	41.9	41.5	42.0	35.6	45.4	46.0	45.7	44.7	42.0	41.1	38.4	33.7	15.8	0.0
CO (lb/day)	550	94.4	126.8	127.1	123.4	119.2	123.0	159.4	150.4	178.3	194.2	194.1	197.0	222.6	239.6	**253.4**	252.6	211.7	211.7	199.9	218.4	234.8	231.7	234.0	226.9	171.6	205.5	211.1	203.7	186.1	183.8	177.0	170.4	147.7	131.8	109.6	2.4
NOx (lb/day)	100	79.4	135.0	156.4	211.3	241.6	289.8	337.0	281.5	368.3	392.0	393.9	307.2	349.9	324.1	**402.0**	341.1	202.2	112.5	103.8	115.4	115.3	116.1	116.9	119.0	90.9	111.0	112.7	111.6	105.8	106.7	104.5	101.4	84.1	80.6	70.5	0.6
SOx (lb/day)	150	0.3	0.6	0.6	0.8	0.8	1.0	1.2	1.1	1.4	1.5	1.4	1.1	1.4	1.3	**1.6**	1.4	0.9	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.0
PM10 (lb/day)[1]	150	32.8	51.3	55.4	70.4	79.2	94.6	112.1	94.5	120.3	126.5	126.2	94.5	119.8	111.0	**138.6**	117.0	70.0	36.7	35.6	41.0	31.1	27.6	28.4	26.0	22.8	23.0	23.1	21.8	19.3	18.4	18.5	18.6	17.4	16.6	15.2	0.7
PM2.5 (lb/day)[1][2]	55	9.6	15.2	16.2	19.9	22.0	26.1	31.6	26.8	34.1	35.9	35.8	27.1	32.8	30.9	**38.1**	32.9	20.6	12.5	12.3	14.3	12.0	11.0	11.3	10.4	8.5	8.9	9.1	8.5	7.3	7.0	7.0	6.9	6.1	5.7	5.0	0.3
CO_2 (lb/day)	NA	34184.0	61604.9	66858.6	84369.0	94226.8	113206.4	139820.0	117165.5	152593.0	162788.1	162207.5	122231.4	155257.6	145676.7	181398.7	155968.1	93316.4	53556.9	52866.9	62621.1	58018.1	53971.8	55503.1	51830.4	39760.0	43260.1	44246.1	41670.0	35738.8	34318.7	34608.0	33609.5	27419.6	27372.0	22337.8	1166.5
CO_2 (MT/yr)	NA											13382.58												11430.50												3934.46

		Year 1												Year 2												Year 3											
Mitigated Facility Emissions[3]	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.3	13.6	14.7	32.5	32.9	33.8	36.0	34.4	38.5	40.1	40.7	44.2	47.7	50.7	**52.3**	50.2	44.9	43.1	37.3	38.3	40.1	41.0	40.7	41.1	35.0	44.4	45.0	44.8	43.8	43.8	41.2	40.3	37.7	33.1	15.2	0.0
CO (lb/day)	550	86.5	118.2	117.7	113.8	109.9	114.0	149.7	140.6	167.0	181.5	181.0	180.3	203.3	218.8	**232.7**	231.4	193.3	192.2	182.2	200.4	214.5	210.5	213.0	205.3	154.9	184.5	189.5	182.2	165.5	163.0	157.2	151.4	131.3	116.9	96.9	2.4
NOx (lb/day)	100	75.9	131.1	151.9	206.9	237.2	285.7	332.7	277.1	363.4	386.6	388.3	300.4	342.7	316.6	**394.4**	333.2	195.0	104.6	96.4	107.6	105.5	105.7	106.4	108.2	82.5	100.6	102.1	101.0	95.7	96.4	94.4	91.6	76.0	72.8	63.7	0.6
SOx (lb/day)	150	0.2	0.5	0.5	0.6	0.7	0.9	1.1	0.9	1.2	1.3	1.3	0.9	1.2	1.1	**1.4**	1.2	0.7	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
PM10 (lb/day)[1]	150	32.6	51.0	55.1	70.1	78.9	94.3	111.8	94.2	119.9	126.0	125.7	93.9	119

Attachment A
Alt Air Renewable Fuels Project
Total Project Component
Table A1 - Construction Emission Summary

		Year 1												Year 2												Year 3											
Total Facility Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.6	14.0	15.1	32.9	33.3	34.1	36.4	34.8	38.9	40.5	41.2	44.9	48.6	51.7	53.3	51.2	45.8	44.0	38.0	39.0	40.9	41.9	41.5	42.0	35.6	45.4	46.0	45.7	44.7	44.7	42.0	41.1	38.4	33.7	15.8	0.0
CO (lb/day)	550	94.4	126.8	127.1	123.4	119.2	123.0	159.4	150.4	178.3	194.2	194.1	197.0	222.6	239.6	253.4	252.6	211.7	211.7	199.9	218.4	234.8	231.7	234.0	226.9	171.6	205.5	211.1	203.7	186.1	183.8	177.0	170.4	147.7	131.8	109.6	2.4
NOx (lb/day)	100	79.4	135.0	156.4	211.3	241.6	289.8	337.0	281.5	368.3	392.0	393.9	307.2	349.9	324.1	402.0	341.1	202.2	112.5	103.8	115.4	115.3	116.1	116.9	119.0	90.9	111.0	112.7	111.6	105.8	106.7	104.5	101.4	84.1	80.6	70.5	0.6
SOx (lb/day)	150	0.3	0.6	0.6	0.8	0.8	1.0	1.2	1.1	1.4	1.5	1.4	1.1	1.4	1.3	1.6	1.4	0.9	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.0
PM10 (lb/day)[1]	150	32.8	51.3	55.4	70.4	79.2	94.6	112.1	94.5	120.3	126.5	126.2	94.5	119.8	111.0	138.6	117.0	70.0	36.7	35.6	41.0	31.1	27.6	28.4	26.0	22.8	23.0	23.1	21.8	19.3	18.4	18.5	18.6	17.4	16.6	15.2	0.7
PM2.5 (lb/day)[1][2]	55	9.6	15.2	16.2	19.9	22.0	26.1	31.6	26.8	34.1	35.9	35.8	27.1	32.8	30.9	38.1	32.9	20.6	12.5	12.3	14.3	12.0	11.0	11.3	10.4	8.5	8.9	9.1	8.5	7.3	7.0	7.0	6.9	6.1	5.7	5.0	0.3
CO_2 (lb/day)	NA	34184.0	61604.9	66858.6	84369.0	94226.8	113206.4	139820.0	117165.5	152593.0	162788.1	162207.5	122231.4	155257.6	145676.7	181398.7	155968.1	93316.4	53556.9	52866.9	62621.1	58018.1	53971.8	55503.1	51830.4	39760.0	43260.1	44246.1	41670.0	35738.8	34318.7	34608.0	33609.5	27419.6	27372.0	22337.8	1166.5
CO_2 (MT/yr)	NA												13382.58												11430.50												3934.46

		Year 1												Year 2												Year 3											
Mitigated Facility Emissions[3]	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.3	13.6	14.7	32.5	32.9	33.8	36.0	34.4	38.5	40.1	40.7	44.2	47.7	50.7	52.3	50.2	44.9	43.1	37.3	38.3	40.1	41.0	40.7	41.1	35.0	44.4	45.0	44.8	43.8	43.8	41.2	40.3	37.7	33.1	15.2	0.0
CO (lb/day)	550	86.5	118.2	117.7	113.8	109.9	114.0	149.7	140.6	167.0	181.5	181.0	180.3	203.3	218.8	232.7	231.4	193.3	192.2	182.2	200.4	214.5	210.5	213.0	205.3	154.9	184.5	189.5	182.2	165.5	163.0	157.2	151.4	131.3	116.9	96.9	2.4
NOx (lb/day)	100	75.9	131.1	151.9	206.9	237.2	285.7	332.7	277.1	363.4	386.6	388.3	300.4	342.7	316.6	394.4	333.2	195.0	104.6	96.4	107.6	105.5	105.7	106.4	108.2	82.5	100.6	102.1	101.0	95.7	96.4	94.4	91.6	76.0	72.8	63.7	0.6
SOx (lb/day)	150	0.2	0.5	0.5	0.6	0.7	0.9	1.1	0.9	1.2	1.3	1.3	0.9	1.2	1.1	1.4	1.2	0.7	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
PM10 (lb/day)[1]	150	32.6	51.0	55.1	70.1	78.9	94.3	111.8	94.2	119.9	126.0	125.7	93.9	119.2	110.4	138.0	116.4	69.4	36.0	35.0	40.3	30.2	26.7	27.5	25.0	22.0	22.1	22.2	20.8	18.4	17.5	17.6	17.7	16.8	16.0	14.7	0.7
PM2.5 (lb/day)[1][2]	55	9.3	14.9	15.9	19.6	21.7	25.8	31.3	26.5	33.7	35.5	35.3	26.6	32.2	30.3	37.5	32.2	20.0	11.8	11.6	13.6	11.2	10.0	10.4	9.4	7.8	8.1	8.2	7.6	6.5	6.1	6.2	6.1	5.5	5.1	4.5	0.3
CO_2 (lb/day)	NA	32817.7	60076.3	65140.7	82618.5	92565.1	111677.9	138153.8	115477.2	150594.5	160457.7	159835.6	119439.4	152246.3	142589.5	178313.4	152637.5	90431.6	50297.6	49572.9	59172.2	53977.7	49599.2	51146.0	47277.8	36221.4	39128.7	39986.5	37408.4	31701.2	30234.0	30532.6	29738.6	24336.2	24086.4	19489.0	1166.5
CO_2 (MT/yr)	NA												13153.96												10994.46												3511.14

		Year 1												Year 2												Year 3											
Total Pipeline Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	5.2	7.0	5.2	5.2	3.4	3.4	0.0	0.0	0.0	0.0
CO (lb/day)	550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.8	49.8	49.8	57.6	44.0	44.0	28.1	28.1	0.0	0.0	0.0	0.0
NOx (lb/day)	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	51.0	51.0	67.8	50.9	50.9	32.4	32.4	0.0	0.0	0.0	0.0
SOx (lb/day)	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
PM10 (lb/day)[1]	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	5.9	5.9	7.3	6.6	6.6	4.5	4.5	0.0	0.0	0.0	0.0
PM2.5 (lb/day)[1][2]	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	3.2	3.9	3.3	3.3	2.1	2.1	0.0	0.0	0.0	0.0
CO_2 (lb/day)	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7169.9	7169.9	7169.9	12125.9	6989.1	6989.1	3977.4	3977.4	0.0	0.0	0.0	0.0
CO_2 (MT/yr)	NA												0.00												0.00												567.13

Includes both SoCal Gas Company and Pipeline Maintanence. Assumes peak overlaps on Year 3 Month 1.

		Year 1												Year 2												Year 3											
Total Project Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.6	14.0	15.1	32.9	33.3	34.1	36.4	34.8	38.9	40.5	41.2	44.9	48.6	51.7	**53.3**	51.2	45.8	44.0	38.0	39.0	40.9	41.9	41.5	42.0	40.8	50.6	51.2	52.7	49.9	49.9	45.4	44.5	38.4	33.7	15.8	0.0
CO (lb/day)	550	94.4	126.8	127.1	123.4	119.2	123.0	159.4	150.4	178.3	194.2	194.1	197.0	222.6	239.6	253.4	252.6	211.7	211.7	199.9	218.4	234.8	231.7	234.0	226.9	221.4	255.4	260.9	**261.3**	230.0	227.7	205.2	198.5	147.7	131.8	109.6	2.4
NOx (lb/day)	100	79.4	135.0	156.4	211.3	241.6	289.8	337.0	281.5	368.3	392.0	393.9	307.2	349.9	324.1	**402.0**	341.1	202.2	112.5	103.8	115.4	115.3	116.1	116.9	119.0	141.9	162.0	163.7	179.3	156.7	157.6	136.9	133.8	84.1	80.6	70.5	0.6
SOx (lb/day)	150	0.3	0.6	0.6	0.8	0.8	1.0	1.2	1.1	1.4	1.5	1.4	1.1	1.4	1.3	**1.6**	1.4	0.9	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.0
PM10 (lb/day)[1]	150	32.8	51.3	55.4	70.4	79.2	94.6	112.1	94.5	120.3	126.5	126.2	94.5	119.8	111.0	**138.6**	117.0	70.0	36.7	35.6	41.0	31.1	27.6	28.4	26.0	28.7	28.9	29.0	29.1	25.9	25.0	23.0	23.0	17.4	16.6	15.2	0.7
PM2.5 (lb/day)[1][2]	55	9.6	15.2	16.2	19.9	22.0	26.1	31.6	26.8	34.1	35.9	35.8	27.1	32.8	30.9	**38.1**	32.9	20.6	12.5	12.3	14.3	12.0	11.0	11.3	10.4	11.7	12.1	12.3	12.4	10.6	10.3	9.1	9.1	6.1	5.7	5.0	0.3
CO_2 (lb/day)	NA	34184.0	61604.9	66858.6	84369.0	94226.8	113206.4	139820.0	117165.5	152593.0	162788.1	162207.5	122231.4	155257.6	145676.7	181398.7	155968.1	93316.4	53556.9	52866.9	62621.1	58018.1	53971.8	55503.1	51830.4	46929.9	50430.0	51416.0	53795.9	42727.9	41307.8	38585.4	37586.9	27419.6	27372.0	22337.8	1166.5
CO_2 (MT/yr)	NA												13382.58												11430.50												4501.59

		Year 1												Year 2												Year 3											
Mitigated Total Project Emissions[3]	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	11.3	13.6	14.7	32.5	32.9	33.8	36.0	34.4	38.5	40.1	40.7	44.2	47.7	50.7	**52.3**	50.2	44.9	43.1	37.3	38.3	40.1	41.0	40.7	41.1	40.2	49.6	50.3	51.8	48.9	49.0	44.5	43.7	37.7	33.1	15.2	0.0
CO (lb/day)	550	86.5	118.2	117.7	113.8	109.9	114.0	149.7	140.6	167.0	181.5	181.0	180.3	203.3	218.8	232.7	231.4	193.3	192.2	182.2	200.4	214.5	210.5	213.0	205.3	204.8	234.4	239.3	**239.9**	209.5	206.9	185.3	179.6	131.3	116.9	96.9	2.4
NOx (lb/day)	100	75.9	131.1	151.9	206.9	237.2	285.7	332.7	277.1	363.4	386.6	388.3	300.4	342.7	316.6	**394.4**	333.2	195.0	104.6	96.4	107.6	105.5	105.7	106.4	108.2	133.5	151.6	153.1	168.8	146.6	147.3	126.8	124.0	76.0	72.8	63.7	0.6
SOx (lb/day)	150	0.2	0.5	0.5	0.6	0.7	0.9	1.1	0.9	1.2	1.3	1.3	0.9	1.2	1.1	**1.4**	1.2	0.7	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0
PM10 (lb/day)[1]	150	32.6	51.0	55.1	70.1	78.9	94.3	111.8	94.2	119.9	126.0	125.7	93.9	119.2	110.4	**138.0**	116.4	69.4	36.0	35.0	40.3	30.2	26.7	27.5	25.0	27.9	28.1	28.1	28.2	25.0	24.1	22.1	22.2	16.8	16.0	14.7	0.7
PM2.5 (lb/day)[1][2]	55	9.3	14.9	15.9	19.6	21.7	25.8	31.3	26.5	33.7	35.5	35.3	26.6	32.2	30.3	**37.5**	32.2	20.0	11.8	11.6	13.6	11.2	10.0	10.4	9.4	11.0	11.3	11.4	11.5	9.8	9.4	8.3	8.3	5.5	5.1	4.5	0.3
CO_2 (lb/day)	NA	32817.7	60076.3	65140.7	82618.5	92565.1	111677.9	138153.8	115477.2	150594.5	160457.7	159835.6	119439.4	152246.3	142589.5	178313.4	152637.5	90431.6	50297.6	49572.9	59172.2	53977.7	49599.2	51146.0	47277.8	43391.3	46298.6	47156.4	49534.3	38690.3	37223.1	34510.1	33716.0	24336.2	24086.4	19489.0	1166.5
CO_2 (MT/yr)	NA												13153.96												10994.46												4078.27

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

(3) Mitigated emissions based on R100 hybid mix of UDDS Cycle and FTP Cycle for the CARB Impact Assessment of Renewable Diesel on Exhaust Emissions from Compression Ignistion Engines (May 2015) for off-road construction equipment. Onsite equipment only.

Bold values are maximums. Highlighted values are significant.

Attachment A
AltAir Renewable Fuels Project

Table A2 - Default Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2021 Emission Factors lb/hr[1]								2022 Emission Factors lb/hr[1]								2023 Emission Factors lb/hr[1]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
JD-210, Case 580 - Box Blades	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.19	0.00	0.01	0.01	32.10	1.43	0.01	0.21	0.19	0.00	0.01	0.01	32.12	1.43	0.12	0.40	0.99	0.00	0.07	0.06	36.32	1.61
Small Loader/Backhoe (Cat 416-Cat 436)	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.19	0.00	0.01	0.01	32.10	1.43	0.01	0.21	0.19	0.00	0.01	0.01	32.12	1.43	0.12	0.40	0.99	0.00	0.07	0.06	36.32	1.61
Cat 14 Grader	ConstMin - Graders	300	Diesel	0.06	0.26	0.79	0.00	0.03	0.02	103.04	4.58	0.06	0.25	0.70	0.00	0.02	0.02	102.99	4.58	0.06	0.25	0.63	0.00	0.02	0.02	102.31	4.55
10-19 MT (SM EX 312 - 318)	ConstMin - Excavators	100	Diesel	0.02	0.24	0.20	0.00	0.01	0.01	36.20	1.61	0.02	0.24	0.18	0.00	0.01	0.01	36.00	1.60	0.02	0.24	0.16	0.00	0.01	0.01	36.00	1.60
20 TO 25 MT (CAT 320,321)	ConstMin - Excavators	175	Diesel	0.03	0.38	0.25	0.00	0.01	0.01	64.94	2.89	0.02	0.38	0.21	0.00	0.01	0.01	64.92	2.89	0.02	0.38	0.18	0.00	0.01	0.01	64.93	2.89
30 TO 35 MT (CAT 328,329)	ConstMin - Excavators	300	Diesel	0.03	0.21	0.33	0.00	0.01	0.01	97.28	4.32	0.03	0.21	0.26	0.00	0.01	0.01	97.25	4.32	0.03	0.20	0.23	0.00	0.01	0.01	97.21	4.32
40 - 48" Single Drum / Smooth / Vibro	ConstMin - Rollers	75	Diesel	0.11	0.35	0.87	0.00	0.06	0.06	30.57	1.36	0.11	0.36	0.84	0.00	0.06	0.06	30.47	1.35	0.11	0.36	0.88	0.00	0.06	0.06	30.95	1.38
78 - 84" Single Drum / Combo / Vibro	ConstMin - Rollers	75	Diesel	0.11	0.35	0.87	0.00	0.06	0.06	30.57	1.36	0.11	0.36	0.84	0.00	0.06	0.06	30.47	1.35	0.11	0.36	0.88	0.00	0.06	0.06	30.95	1.38
Walk Behind Roller (2-Drum) (RAMMEX)	ConstMin - Rollers	25	Diesel	0.08	0.22	0.16	0.00	0.02	0.02	12.13	0.54	*0.08*	*0.22*	*0.16*	*0.00*	*0.02*	*0.02*	*12.13*	*0.54*	0.08	0.23	0.16	0.00	0.02	0.02	12.13	0.54
Plate Compactor	OFF - ConstMin - Plate Compactors	25	Diesel	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20
Rough Terrain Crane 70-79 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Rough Terrain Crane 80-89 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Rough Terrain Crane 100-110 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Carry Deck Crane <15 Ton	ConstMin - Cranes	175	Diesel	0.05	0.33	0.47	0.00	0.03	0.02	49.15	2.18	0.04	0.32	0.43	0.00	0.02	0.02	49.10	2.18	0.04	0.32	0.39	0.00	0.02	0.02	49.05	2.18
Carry Deck Crane >15 Ton	ConstMin - Cranes	175	Diesel	0.05	0.33	0.47	0.00	0.03	0.02	49.15	2.18	0.04	0.32	0.43	0.00	0.02	0.02	49.10	2.18	0.04	0.32	0.39	0.00	0.02	0.02	49.05	2.18
Crane Hyd/C 130-150 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29	0.05	0.25	0.52	0.00	0.02	0.02	73.88	3.28	0.04	0.25	0.48	0.00	0.02	0.02	73.75	3.28
Crane Hyd/C 265 Ton	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
230-250 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.73	0.00	0.03	0.03	123.42	5.49	0.06	0.44	0.61	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.52	0.00	0.02	0.02	123.10	5.47
601- 800 Ton Lattice Crawler Crane	ConstMin - Cranes	750	Diesel	0.26	2.14	2.80	0.00	0.14	0.13	215.37	9.57	0.13	1.05	1.38	0.00	0.07	0.06	211.98	9.42	0.15	1.16	1.58	0.00	0.08	0.07	213.61	9.49
185 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
250 - 300 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
375 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
1600 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	600	Diesel	0.04	0.37	0.36	0.00	0.01	0.01	193.59	8.60	0.04	0.37	0.28	0.00	0.01	0.01	193.59	8.60	0.03	0.37	0.23	0.00	0.01	0.01	193.59	8.60
300 - 350 Amp Diesel Welder	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39
1 - 24 KW Generator	Portable Equipment - Rental Generator	50	Diesel	0.02	0.21	0.16	0.00	0.01	0.01	20.06	0.89	0.02	0.21	0.13	0.00	0.01	0.01	20.06	0.89	0.02	0.21	0.11	0.00	0.00	0.00	20.06	0.89
Portable Light Plant - Moon Glo's	OFF - Light Commercial - Generator Sets	25	Gasoline	0.07	4.07	0.05	0.00	0.00	0.00	6.91	0.71	0.07	4.06	0.05	0.00	0.00	0.00	6.91	0.71	0.07	4.06	0.05	0.00	0.00	0.00	6.91	0.70
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.04	0.28	0.34	0.00	0.02	0.02	38.58	1.71	0.04	0.28	0.32	0.00	0.02	0.02	38.70	1.72	0.06	0.31	0.44	0.00	0.04	0.04	38.37	1.71
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.04	0.28	0.34	0.00	0.02	0.02	38.58	1.71	0.04	0.28	0.32	0.00	0.02	0.02	38.70	1.72	0.06	0.31	0.44	0.00	0.04	0.04	38.37	1.71
Cat IT28, 928, 930, 938 Loader	ConstMin - Rubber Tired Loaders	175	Diesel	0.04	0.40	0.37	0.00	0.02	0.02	63.04	2.80	0.04	0.40	0.30	0.00	0.02	0.01	63.02	2.80	0.03	0.39	0.26	0.00	0.01	0.01	62.95	2.80
Cat 966, JA744, WA500, L150 Loader	ConstMin - Rubber Tired Loaders	300	Diesel	0.04	0.21	0.50	0.00	0.02	0.02	86.70	3.85	0.04	0.21	0.39	0.00	0.01	0.01	87.61	3.89	0.03	0.20	0.34	0.00	0.01	0.01	87.53	3.89
Skid Steer-Wheeled	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.19	0.00	0.01	0.01	32.10	1.43	0.01	0.21	0.19	0.00	0.01	0.01	32.12	1.43	0.12	0.40	0.99	0.00	0.07	0.06	36.32	1.61
Skid Steer - Track	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.19	0.00	0.01	0.01	32.10	1.43	0.01	0.21	0.19	0.00	0.01	0.01	32.12	1.43	0.12	0.40	0.99	0.00	0.07	0.06	36.32	1.61
Rough Terrain Scissor Lift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
60' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
80' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
120' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
135' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
150' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
Forklift	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.18	0.00	0.01	0.00	45.05	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.11	2.00
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.28	0.00	0.02	0.02	58.33	2.59	0.03	0.33	0.25	0.00	0.02	0.02	58.64	2.61	0.03	0.33	0.22	0.00	0.01	0.01	58.83	2.61
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.28	0.00	0.02	0.02	58.33	2.59	0.03	0.33	0.25	0.00	0.02	0.02	58.64	2.61	0.03	0.33	0.22	0.00	0.01	0.01	58.83	2.61
6,000 - 8,000 lb Extendable	ConstMin - Rough Terrain Forklifts	75	Diesel	0.10	0.35	0.85	0.00	0.06	0.05	31.04	1.38	0.10	0.35	0.86	0.00	0.06	0.05	31.04	1.38	0.10	0.35	0.86	0.00	0.06	0.05	31.04	1.38
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.18	0.00	0.01	0.00	45.05	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.11	2.00
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.18	0.00	0.01	0.00	45.05	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.16	0.00	0.00	0.00	45.11	2.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.02*	*0.02*	*11.06*	*0.49*
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.02*	*0.02*	*11.06*	*0.49*
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	0.08	0.21	0.14	0.00	0.02	0.02	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.02*	*0.02*	*11.06*	*0.49*
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	Industrial - Other General Industrial Equipment	75	Diesel	0.02	0.20	0.16	0.00	0.01	0.01	28.47	1.27	0.01	0.19	0.14	0.00	0.01	0.01	28.42	1.26	0.01	0.19	0.14	0.00	0.01	0.01	28.48	1.27
Fusion Machine >36" Ips	Industrial - Other General Industrial Equipment	175	Diesel	0.03	0.37	0.28	0.00	0.01	0.01	59.11	2.63	0.03	0.37	0.26	0.00	0.01	0.01	59.11	2.63	0.02	0.36	0.20	0.00	0.01	0.01	59.11	2.63

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used.*

Attachment A
AltAir Renewable Fuels Project

Table A3 - Tier 4 Adjusted Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2021 Emission Factors lb/hr[1]								2022 Emission Factors lb/hr[1]								2023 Emission Factors lb/hr[1]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
JD-210, Case 580 - Box Blades	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.10	1.43	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Small Loader/Backhoe (Cat 416-Cat 436)	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.10	1.43	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Cat 14 Grader	ConstMin - Graders	300	Diesel	0.06	0.26	0.20	0.00	0.01	0.01	103.04	4.58	0.06	0.25	0.20	0.00	0.01	0.01	102.99	4.58	0.06	0.25	0.20	0.00	0.01	0.01	102.31	4.55
10-19 MT (SM EX 312 - 318)	ConstMin - Excavators	100	Diesel	0.02	0.24	0.07	0.00	0.00	0.00	36.20	1.61	0.02	0.24	0.07	0.00	0.00	0.00	36.00	1.60	0.02	0.24	0.07	0.00	0.00	0.00	36.00	1.60
20 TO 25 MT (CAT 320,321)	ConstMin - Excavators	175	Diesel	0.03	0.38	0.12	0.00	0.01	0.01	64.94	2.89	0.02	0.38	0.12	0.00	0.01	0.01	64.92	2.89	0.02	0.38	0.12	0.00	0.01	0.01	64.93	2.89
30 TO 35 MT (CAT 328,329)	ConstMin - Excavators	300	Diesel	0.03	0.21	0.20	0.00	0.01	0.01	97.28	4.32	0.03	0.21	0.20	0.00	0.01	0.01	97.25	4.32	0.03	0.20	0.20	0.00	0.01	0.01	97.21	4.32
40 - 48" Single Drum / Smooth / Vibro	ConstMin - Rollers	75	Diesel	0.02	0.35	0.05	0.00	0.00	0.00	30.57	1.36	0.02	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.02	0.36	0.05	0.00	0.00	0.00	30.95	1.38
78 - 84" Single Drum / Combo / Vibro	ConstMin - Rollers	75	Diesel	0.02	0.35	0.05	0.00	0.00	0.00	30.57	1.36	0.02	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.02	0.36	0.05	0.00	0.00	0.00	30.95	1.38
Walk Behind Roller (2-Drum) (RAMMEX)	ConstMin - Rollers	25	Diesel	0.08	0.22	0.16	0.00	0.00	0.00	12.13	0.54	*0.08*	*0.22*	*0.16*	*0.00*	*0.00*	*0.00*	*12.13*	*0.54*	0.08	0.23	0.16	0.00	0.00	0.00	12.13	0.54
Plate Compactor	OFF - ConstMin - Plate Compactors	25	Diesel	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20
Rough Terrain Crane 70-79 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 80-89 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 100-110 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Carry Deck Crane <15 Ton	ConstMin - Cranes	175	Diesel	0.05	0.33	0.12	0.00	0.01	0.01	49.15	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Carry Deck Crane >15 Ton	ConstMin - Cranes	175	Diesel	0.05	0.33	0.12	0.00	0.01	0.01	49.15	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Crane Hyd/C 130-150 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	74.00	3.29	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Crane Hyd/C 265 Ton	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
230-250 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.50	0.40	0.00	0.02	0.02	123.42	5.49	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
601- 800 Ton Lattice Crawler Crane	ConstMin - Cranes	750	Diesel	0.23	2.14	0.50	0.00	0.02	0.02	215.37	9.57	0.13	1.05	0.50	0.00	0.02	0.02	211.98	9.42	0.15	1.16	0.50	0.00	0.02	0.02	213.61	9.49
185 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
250 - 300 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
375 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
1600 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	600	Diesel	0.04	0.37	0.36	0.00	0.01	0.01	193.59	8.60	0.04	0.37	0.28	0.00	0.01	0.01	193.59	8.60	0.03	0.37	0.23	0.00	0.01	0.01	193.59	8.60
300 - 350 Amp Diesel Welder	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39
1 - 24 KW Generator	Portable Equipment - Rental Generator	50	Diesel	0.02	0.21	0.16	0.00	0.00	0.00	20.06	0.89	0.02	0.21	0.13	0.00	0.00	0.00	20.06	0.89	0.02	0.21	0.11	0.00	0.00	0.00	20.06	0.89
Portable Light Plant - Moon Glo's	OFF - Light Commercial - Generator Sets	25	Gasoline	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.71	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.71	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.70
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.02	0.28	0.05	0.00	0.00	0.00	38.58	1.71	0.02	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.02	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.02	0.28	0.05	0.00	0.00	0.00	38.58	1.71	0.02	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.02	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Cat IT28, 928, 930, 938 Loader	ConstMin - Rubber Tired Loaders	175	Diesel	0.04	0.40	0.12	0.00	0.01	0.01	63.04	2.80	0.04	0.40	0.12	0.00	0.01	0.01	63.02	2.80	0.03	0.39	0.12	0.00	0.01	0.01	62.95	2.80
Cat 966, JA744, WA500, L150 Loader	ConstMin - Rubber Tired Loaders	300	Diesel	0.04	0.21	0.20	0.00	0.01	0.01	86.70	3.85	0.04	0.21	0.20	0.00	0.01	0.01	87.61	3.89	0.03	0.20	0.20	0.00	0.01	0.01	87.53	3.89
Skid Steer-Wheeled	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.10	1.43	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Skid Steer - Track	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.10	1.43	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Rough Terrain Scissor Lift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
60' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
80' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
120' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
135' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
150' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
Forklift	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.05	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.12	0.00	0.01	0.01	58.33	2.59	0.03	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.03	0.33	0.12	0.00	0.01	0.01	58.83	2.61
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.12	0.00	0.01	0.01	58.33	2.59	0.03	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.03	0.33	0.12	0.00	0.01	0.01	58.83	2.61
6,000 - 8,000 lb Extendable	ConstMin - Rough Terrain Forklifts	75	Diesel	0.02	0.35	0.05	0.00	0.00	0.00	31.04	1.38	0.02	0.35	0.05	0.00	0.00	0.00	31.04	1.38	0.02	0.35	0.05	0.00	0.00	0.00	31.04	1.38
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.05	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.05	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	Industrial - Other General Industrial Equipment	75	Diesel	0.02	0.20	0.05	0.00	0.00	0.00	28.47	1.27	0.01	0.19	0.05	0.00	0.00	0.00	28.42	1.26	0.01	0.19	0.05	0.00	0.00	0.00	28.48	1.27
Fusion Machine >36" Ips	Industrial - Other General Industrial Equipment	175	Diesel	0.03	0.37	0.12	0.00	0.01	0.01	59.11	2.63	0.03	0.37	0.12	0.00	0.01	0.01	59.11	2.63	0.02	0.36	0.12	0.00	0.01	0.01	59.11	2.63

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used. Mitigated PM2.5 uses PM10 emission factors.*

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
25	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.26E-01	1.93E-01	1.21E-03
26	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.35E-01	2.01E-01	1.26E-03
27	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.44E-01	2.08E-01	1.31E-03
28	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.53E-01	2.16E-01	1.36E-03
29	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.62E-01	2.24E-01	1.41E-03
30	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.71E-01	2.31E-01	1.46E-03
31	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.80E-01	2.39E-01	1.50E-03
32	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.89E-01	2.47E-01	1.55E-03
33	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	2.98E-01	2.55E-01	1.60E-03
34	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.07E-01	2.62E-01	1.65E-03
35	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.16E-01	2.70E-01	1.70E-03
36	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.25E-01	2.78E-01	1.75E-03
37	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.34E-01	2.85E-01	1.79E-03
38	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.43E-01	2.93E-01	1.84E-03
39	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.53E-01	3.01E-01	1.89E-03
40	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.62E-01	3.09E-01	1.94E-03
41	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.71E-01	3.16E-01	1.99E-03
42	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.80E-01	3.24E-01	2.04E-03
43	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.89E-01	3.32E-01	2.09E-03
44	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	3.98E-01	3.40E-01	2.13E-03
45	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.07E-01	3.47E-01	2.18E-03
46	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.16E-01	3.55E-01	2.23E-03
47	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.25E-01	3.63E-01	2.28E-03
48	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.34E-01	3.70E-01	2.33E-03
49	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.43E-01	3.78E-01	2.38E-03
50	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.52E-01	3.86E-01	2.43E-03
51	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.61E-01	3.94E-01	2.47E-03
52	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.70E-01	4.01E-01	2.52E-03
53	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.79E-01	4.09E-01	2.57E-03
54	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.88E-01	4.17E-01	2.62E-03
55	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	4.97E-01	4.24E-01	2.67E-03
56	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.06E-01	4.32E-01	2.72E-03
57	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.15E-01	4.40E-01	2.76E-03
58	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.24E-01	4.48E-01	2.81E-03
59	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.33E-01	4.55E-01	2.86E-03
60	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.42E-01	4.63E-01	2.91E-03
61	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.51E-01	4.71E-01	2.96E-03
62	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.60E-01	4.78E-01	3.01E-03
63	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.69E-01	4.86E-01	3.06E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
64	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.78E-01	4.94E-01	3.10E-03
65	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.88E-01	5.02E-01	3.15E-03
66	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	5.97E-01	5.09E-01	3.20E-03
67	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.06E-01	5.17E-01	3.25E-03
68	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.15E-01	5.25E-01	3.30E-03
69	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.24E-01	5.32E-01	3.35E-03
70	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.33E-01	5.40E-01	3.40E-03
71	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.42E-01	5.48E-01	3.44E-03
72	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.51E-01	5.56E-01	3.49E-03
73	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.60E-01	5.63E-01	3.54E-03
74	0.00E+00	4.10E+00	3.50E+00	2.20E-02	0.00E+00	6.69E-01	5.71E-01	3.59E-03
75	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.31E-02	6.12E-01	4.96E-02	2.48E-03
76	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.35E-02	6.20E-01	5.03E-02	2.51E-03
77	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.38E-02	6.28E-01	5.09E-02	2.55E-03
78	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.41E-02	6.36E-01	5.16E-02	2.58E-03
79	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.44E-02	6.44E-01	5.22E-02	2.61E-03
80	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.47E-02	6.53E-01	5.29E-02	2.65E-03
81	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.50E-02	6.61E-01	5.36E-02	2.68E-03
82	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.53E-02	6.69E-01	5.42E-02	2.71E-03
83	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.56E-02	6.77E-01	5.49E-02	2.74E-03
84	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.59E-02	6.85E-01	5.56E-02	2.78E-03
85	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.62E-02	6.93E-01	5.62E-02	2.81E-03
86	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.65E-02	7.02E-01	5.69E-02	2.84E-03
87	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.69E-02	7.10E-01	5.75E-02	2.88E-03
88	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.72E-02	7.18E-01	5.82E-02	2.91E-03
89	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.75E-02	7.26E-01	5.89E-02	2.94E-03
90	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.78E-02	7.34E-01	5.95E-02	2.98E-03
91	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.81E-02	7.42E-01	6.02E-02	3.01E-03
92	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.84E-02	7.50E-01	6.08E-02	3.04E-03
93	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.87E-02	7.59E-01	6.15E-02	3.08E-03
94	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.90E-02	7.67E-01	6.22E-02	3.11E-03
95	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.93E-02	7.75E-01	6.28E-02	3.14E-03
96	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.96E-02	7.83E-01	6.35E-02	3.17E-03
97	1.40E-01	3.70E+00	3.00E-01	1.50E-02	2.99E-02	7.91E-01	6.42E-02	3.21E-03
98	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.02E-02	7.99E-01	6.48E-02	3.24E-03
99	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.06E-02	8.08E-01	6.55E-02	3.27E-03
100	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.09E-02	8.16E-01	6.61E-02	3.31E-03
101	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.12E-02	8.24E-01	6.68E-02	3.34E-03
102	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.15E-02	8.32E-01	6.75E-02	3.37E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
103	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.18E-02	8.40E-01	6.81E-02	3.41E-03
104	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.21E-02	8.48E-01	6.88E-02	3.44E-03
105	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.24E-02	8.56E-01	6.94E-02	3.47E-03
106	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.27E-02	8.65E-01	7.01E-02	3.51E-03
107	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.30E-02	8.73E-01	7.08E-02	3.54E-03
108	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.33E-02	8.81E-01	7.14E-02	3.57E-03
109	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.36E-02	8.89E-01	7.21E-02	3.60E-03
110	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.40E-02	8.97E-01	7.28E-02	3.64E-03
111	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.43E-02	9.05E-01	7.34E-02	3.67E-03
112	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.46E-02	9.14E-01	7.41E-02	3.70E-03
113	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.49E-02	9.22E-01	7.47E-02	3.74E-03
114	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.52E-02	9.30E-01	7.54E-02	3.77E-03
115	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.55E-02	9.38E-01	7.61E-02	3.80E-03
116	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.58E-02	9.46E-01	7.67E-02	3.84E-03
117	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.61E-02	9.54E-01	7.74E-02	3.87E-03
118	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.64E-02	9.63E-01	7.80E-02	3.90E-03
119	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.67E-02	9.71E-01	7.87E-02	3.94E-03
120	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.70E-02	9.79E-01	7.94E-02	3.97E-03
121	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.73E-02	9.87E-01	8.00E-02	4.00E-03
122	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.77E-02	9.95E-01	8.07E-02	4.03E-03
123	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.80E-02	1.00E+00	8.14E-02	4.07E-03
124	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.83E-02	1.01E+00	8.20E-02	4.10E-03
125	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.86E-02	1.02E+00	8.27E-02	4.13E-03
126	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.89E-02	1.03E+00	8.33E-02	4.17E-03
127	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.92E-02	1.04E+00	8.40E-02	4.20E-03
128	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.95E-02	1.04E+00	8.47E-02	4.23E-03
129	1.40E-01	3.70E+00	3.00E-01	1.50E-02	3.98E-02	1.05E+00	8.53E-02	4.27E-03
130	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.01E-02	1.06E+00	8.60E-02	4.30E-03
131	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.04E-02	1.07E+00	8.66E-02	4.33E-03
132	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.07E-02	1.08E+00	8.73E-02	4.37E-03
133	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.11E-02	1.08E+00	8.80E-02	4.40E-03
134	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.14E-02	1.09E+00	8.86E-02	4.43E-03
135	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.17E-02	1.10E+00	8.93E-02	4.46E-03
136	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.20E-02	1.11E+00	8.99E-02	4.50E-03
137	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.23E-02	1.12E+00	9.06E-02	4.53E-03
138	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.26E-02	1.13E+00	9.13E-02	4.56E-03
139	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.29E-02	1.13E+00	9.19E-02	4.60E-03
140	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.32E-02	1.14E+00	9.26E-02	4.63E-03
141	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.35E-02	1.15E+00	9.33E-02	4.66E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
142	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.38E-02	1.16E+00	9.39E-02	4.70E-03
143	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.41E-02	1.17E+00	9.46E-02	4.73E-03
144	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.44E-02	1.17E+00	9.52E-02	4.76E-03
145	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.48E-02	1.18E+00	9.59E-02	4.80E-03
146	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.51E-02	1.19E+00	9.66E-02	4.83E-03
147	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.54E-02	1.20E+00	9.72E-02	4.86E-03
148	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.57E-02	1.21E+00	9.79E-02	4.89E-03
149	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.60E-02	1.22E+00	9.85E-02	4.93E-03
150	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.63E-02	1.22E+00	9.92E-02	4.96E-03
151	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.66E-02	1.23E+00	9.99E-02	4.99E-03
152	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.69E-02	1.24E+00	1.01E-01	5.03E-03
153	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.72E-02	1.25E+00	1.01E-01	5.06E-03
154	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.75E-02	1.26E+00	1.02E-01	5.09E-03
155	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.78E-02	1.26E+00	1.03E-01	5.13E-03
156	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.81E-02	1.27E+00	1.03E-01	5.16E-03
157	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.85E-02	1.28E+00	1.04E-01	5.19E-03
158	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.88E-02	1.29E+00	1.04E-01	5.22E-03
159	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.91E-02	1.30E+00	1.05E-01	5.26E-03
160	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.94E-02	1.31E+00	1.06E-01	5.29E-03
161	1.40E-01	3.70E+00	3.00E-01	1.50E-02	4.97E-02	1.31E+00	1.06E-01	5.32E-03
162	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.00E-02	1.32E+00	1.07E-01	5.36E-03
163	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.03E-02	1.33E+00	1.08E-01	5.39E-03
164	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.06E-02	1.34E+00	1.08E-01	5.42E-03
165	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.09E-02	1.35E+00	1.09E-01	5.46E-03
166	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.12E-02	1.35E+00	1.10E-01	5.49E-03
167	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.15E-02	1.36E+00	1.10E-01	5.52E-03
168	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.19E-02	1.37E+00	1.11E-01	5.56E-03
169	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.22E-02	1.38E+00	1.12E-01	5.59E-03
170	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.25E-02	1.39E+00	1.12E-01	5.62E-03
171	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.28E-02	1.39E+00	1.13E-01	5.65E-03
172	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.31E-02	1.40E+00	1.14E-01	5.69E-03
173	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.34E-02	1.41E+00	1.14E-01	5.72E-03
174	1.40E-01	3.70E+00	3.00E-01	1.50E-02	5.37E-02	1.42E+00	1.15E-01	5.75E-03
175	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.40E-02	1.00E+00	1.16E-01	5.79E-03
176	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.43E-02	1.01E+00	1.16E-01	5.82E-03
177	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.46E-02	1.01E+00	1.17E-01	5.85E-03
178	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.49E-02	1.02E+00	1.18E-01	5.89E-03
179	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.52E-02	1.03E+00	1.18E-01	5.92E-03
180	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.56E-02	1.03E+00	1.19E-01	5.95E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
181	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.59E-02	1.04E+00	1.20E-01	5.99E-03
182	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.62E-02	1.04E+00	1.20E-01	6.02E-03
183	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.65E-02	1.05E+00	1.21E-01	6.05E-03
184	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.68E-02	1.05E+00	1.22E-01	6.08E-03
185	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.71E-02	1.06E+00	1.22E-01	6.12E-03
186	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.74E-02	1.07E+00	1.23E-01	6.15E-03
187	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.77E-02	1.07E+00	1.24E-01	6.18E-03
188	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.80E-02	1.08E+00	1.24E-01	6.22E-03
189	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.83E-02	1.08E+00	1.25E-01	6.25E-03
190	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.86E-02	1.09E+00	1.26E-01	6.28E-03
191	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.90E-02	1.09E+00	1.26E-01	6.32E-03
192	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.93E-02	1.10E+00	1.27E-01	6.35E-03
193	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.96E-02	1.11E+00	1.28E-01	6.38E-03
194	1.40E-01	2.60E+00	3.00E-01	1.50E-02	5.99E-02	1.11E+00	1.28E-01	6.42E-03
195	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.02E-02	1.12E+00	1.29E-01	6.45E-03
196	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.05E-02	1.12E+00	1.30E-01	6.48E-03
197	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.08E-02	1.13E+00	1.30E-01	6.51E-03
198	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.11E-02	1.13E+00	1.31E-01	6.55E-03
199	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.14E-02	1.14E+00	1.32E-01	6.58E-03
200	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.17E-02	1.15E+00	1.32E-01	6.61E-03
201	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.20E-02	1.15E+00	1.33E-01	6.65E-03
202	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.23E-02	1.16E+00	1.34E-01	6.68E-03
203	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.27E-02	1.16E+00	1.34E-01	6.71E-03
204	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.30E-02	1.17E+00	1.35E-01	6.75E-03
205	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.33E-02	1.18E+00	1.36E-01	6.78E-03
206	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.36E-02	1.18E+00	1.36E-01	6.81E-03
207	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.39E-02	1.19E+00	1.37E-01	6.85E-03
208	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.42E-02	1.19E+00	1.38E-01	6.88E-03
209	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.45E-02	1.20E+00	1.38E-01	6.91E-03
210	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.48E-02	1.20E+00	1.39E-01	6.94E-03
211	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.51E-02	1.21E+00	1.40E-01	6.98E-03
212	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.54E-02	1.22E+00	1.40E-01	7.01E-03
213	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.57E-02	1.22E+00	1.41E-01	7.04E-03
214	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.61E-02	1.23E+00	1.42E-01	7.08E-03
215	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.64E-02	1.23E+00	1.42E-01	7.11E-03
216	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.67E-02	1.24E+00	1.43E-01	7.14E-03
217	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.70E-02	1.24E+00	1.44E-01	7.18E-03
218	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.73E-02	1.25E+00	1.44E-01	7.21E-03
219	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.76E-02	1.26E+00	1.45E-01	7.24E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
220	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.79E-02	1.26E+00	1.46E-01	7.28E-03
221	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.82E-02	1.27E+00	1.46E-01	7.31E-03
222	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.85E-02	1.27E+00	1.47E-01	7.34E-03
223	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.88E-02	1.28E+00	1.47E-01	7.37E-03
224	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.91E-02	1.28E+00	1.48E-01	7.41E-03
225	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.94E-02	1.29E+00	1.49E-01	7.44E-03
226	1.40E-01	2.60E+00	3.00E-01	1.50E-02	6.98E-02	1.30E+00	1.49E-01	7.47E-03
227	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.01E-02	1.30E+00	1.50E-01	7.51E-03
228	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.04E-02	1.31E+00	1.51E-01	7.54E-03
229	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.07E-02	1.31E+00	1.51E-01	7.57E-03
230	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.10E-02	1.32E+00	1.52E-01	7.61E-03
231	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.13E-02	1.32E+00	1.53E-01	7.64E-03
232	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.16E-02	1.33E+00	1.53E-01	7.67E-03
233	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.19E-02	1.34E+00	1.54E-01	7.71E-03
234	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.22E-02	1.34E+00	1.55E-01	7.74E-03
235	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.25E-02	1.35E+00	1.55E-01	7.77E-03
236	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.28E-02	1.35E+00	1.56E-01	7.80E-03
237	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.31E-02	1.36E+00	1.57E-01	7.84E-03
238	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.35E-02	1.36E+00	1.57E-01	7.87E-03
239	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.38E-02	1.37E+00	1.58E-01	7.90E-03
240	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.41E-02	1.38E+00	1.59E-01	7.94E-03
241	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.44E-02	1.38E+00	1.59E-01	7.97E-03
242	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.47E-02	1.39E+00	1.60E-01	8.00E-03
243	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.50E-02	1.39E+00	1.61E-01	8.04E-03
244	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.53E-02	1.40E+00	1.61E-01	8.07E-03
245	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.56E-02	1.40E+00	1.62E-01	8.10E-03
246	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.59E-02	1.41E+00	1.63E-01	8.14E-03
247	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.62E-02	1.42E+00	1.63E-01	8.17E-03
248	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.65E-02	1.42E+00	1.64E-01	8.20E-03
249	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.69E-02	1.43E+00	1.65E-01	8.23E-03
250	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.72E-02	1.43E+00	1.65E-01	8.27E-03
251	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.75E-02	1.44E+00	1.66E-01	8.30E-03
252	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.78E-02	1.44E+00	1.67E-01	8.33E-03
253	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.81E-02	1.45E+00	1.67E-01	8.37E-03
254	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.84E-02	1.46E+00	1.68E-01	8.40E-03
255	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.87E-02	1.46E+00	1.69E-01	8.43E-03
256	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.90E-02	1.47E+00	1.69E-01	8.47E-03
257	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.93E-02	1.47E+00	1.70E-01	8.50E-03
258	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.96E-02	1.48E+00	1.71E-01	8.53E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
259	1.40E-01	2.60E+00	3.00E-01	1.50E-02	7.99E-02	1.48E+00	1.71E-01	8.56E-03
260	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.02E-02	1.49E+00	1.72E-01	8.60E-03
261	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.06E-02	1.50E+00	1.73E-01	8.63E-03
262	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.09E-02	1.50E+00	1.73E-01	8.66E-03
263	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.12E-02	1.51E+00	1.74E-01	8.70E-03
264	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.15E-02	1.51E+00	1.75E-01	8.73E-03
265	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.18E-02	1.52E+00	1.75E-01	8.76E-03
266	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.21E-02	1.52E+00	1.76E-01	8.80E-03
267	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.24E-02	1.53E+00	1.77E-01	8.83E-03
268	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.27E-02	1.54E+00	1.77E-01	8.86E-03
269	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.30E-02	1.54E+00	1.78E-01	8.90E-03
270	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.33E-02	1.55E+00	1.79E-01	8.93E-03
271	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.36E-02	1.55E+00	1.79E-01	8.96E-03
272	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.40E-02	1.56E+00	1.80E-01	8.99E-03
273	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.43E-02	1.56E+00	1.81E-01	9.03E-03
274	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.46E-02	1.57E+00	1.81E-01	9.06E-03
275	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.49E-02	1.58E+00	1.82E-01	9.09E-03
276	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.52E-02	1.58E+00	1.83E-01	9.13E-03
277	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.55E-02	1.59E+00	1.83E-01	9.16E-03
278	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.58E-02	1.59E+00	1.84E-01	9.19E-03
279	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.61E-02	1.60E+00	1.85E-01	9.23E-03
280	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.64E-02	1.60E+00	1.85E-01	9.26E-03
281	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.67E-02	1.61E+00	1.86E-01	9.29E-03
282	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.70E-02	1.62E+00	1.87E-01	9.33E-03
283	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.73E-02	1.62E+00	1.87E-01	9.36E-03
284	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.77E-02	1.63E+00	1.88E-01	9.39E-03
285	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.80E-02	1.63E+00	1.88E-01	9.42E-03
286	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.83E-02	1.64E+00	1.89E-01	9.46E-03
287	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.86E-02	1.65E+00	1.90E-01	9.49E-03
288	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.89E-02	1.65E+00	1.90E-01	9.52E-03
289	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.92E-02	1.66E+00	1.91E-01	9.56E-03
290	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.95E-02	1.66E+00	1.92E-01	9.59E-03
291	1.40E-01	2.60E+00	3.00E-01	1.50E-02	8.98E-02	1.67E+00	1.92E-01	9.62E-03
292	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.01E-02	1.67E+00	1.93E-01	9.66E-03
293	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.04E-02	1.68E+00	1.94E-01	9.69E-03
294	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.07E-02	1.69E+00	1.94E-01	9.72E-03
295	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.11E-02	1.69E+00	1.95E-01	9.76E-03
296	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.14E-02	1.70E+00	1.96E-01	9.79E-03
297	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.17E-02	1.70E+00	1.96E-01	9.82E-03

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
298	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.20E-02	1.71E+00	1.97E-01	9.85E-03
299	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.23E-02	1.71E+00	1.98E-01	9.89E-03
300	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.26E-02	1.72E+00	1.98E-01	9.92E-03
301	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.29E-02	1.73E+00	1.99E-01	9.95E-03
302	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.32E-02	1.73E+00	2.00E-01	9.99E-03
303	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.35E-02	1.74E+00	2.00E-01	1.00E-02
304	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.38E-02	1.74E+00	2.01E-01	1.01E-02
305	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.41E-02	1.75E+00	2.02E-01	1.01E-02
306	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.44E-02	1.75E+00	2.02E-01	1.01E-02
307	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.48E-02	1.76E+00	2.03E-01	1.02E-02
308	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.51E-02	1.77E+00	2.04E-01	1.02E-02
309	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.54E-02	1.77E+00	2.04E-01	1.02E-02
310	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.57E-02	1.78E+00	2.05E-01	1.03E-02
311	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.60E-02	1.78E+00	2.06E-01	1.03E-02
312	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.63E-02	1.79E+00	2.06E-01	1.03E-02
313	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.66E-02	1.79E+00	2.07E-01	1.04E-02
314	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.69E-02	1.80E+00	2.08E-01	1.04E-02
315	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.72E-02	1.81E+00	2.08E-01	1.04E-02
316	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.75E-02	1.81E+00	2.09E-01	1.04E-02
317	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.78E-02	1.82E+00	2.10E-01	1.05E-02
318	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.81E-02	1.82E+00	2.10E-01	1.05E-02
319	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.85E-02	1.83E+00	2.11E-01	1.05E-02
320	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.88E-02	1.83E+00	2.12E-01	1.06E-02
321	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.91E-02	1.84E+00	2.12E-01	1.06E-02
322	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.94E-02	1.85E+00	2.13E-01	1.06E-02
323	1.40E-01	2.60E+00	3.00E-01	1.50E-02	9.97E-02	1.85E+00	2.14E-01	1.07E-02
324	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.00E-01	1.86E+00	2.14E-01	1.07E-02
325	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.00E-01	1.86E+00	2.15E-01	1.07E-02
326	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.01E-01	1.87E+00	2.16E-01	1.08E-02
327	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.01E-01	1.87E+00	2.16E-01	1.08E-02
328	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.01E-01	1.88E+00	2.17E-01	1.08E-02
329	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.02E-01	1.89E+00	2.18E-01	1.09E-02
330	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.02E-01	1.89E+00	2.18E-01	1.09E-02
331	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.02E-01	1.90E+00	2.19E-01	1.09E-02
332	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.02E-01	1.90E+00	2.20E-01	1.10E-02
333	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.03E-01	1.91E+00	2.20E-01	1.10E-02
334	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.03E-01	1.91E+00	2.21E-01	1.10E-02
335	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.03E-01	1.92E+00	2.22E-01	1.11E-02
336	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.04E-01	1.93E+00	2.22E-01	1.11E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
337	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.04E-01	1.93E+00	2.23E-01	1.11E-02
338	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.04E-01	1.94E+00	2.24E-01	1.12E-02
339	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.05E-01	1.94E+00	2.24E-01	1.12E-02
340	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.05E-01	1.95E+00	2.25E-01	1.12E-02
341	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.05E-01	1.95E+00	2.26E-01	1.13E-02
342	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.06E-01	1.96E+00	2.26E-01	1.13E-02
343	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.06E-01	1.97E+00	2.27E-01	1.13E-02
344	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.06E-01	1.97E+00	2.28E-01	1.14E-02
345	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.06E-01	1.98E+00	2.28E-01	1.14E-02
346	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.07E-01	1.98E+00	2.29E-01	1.14E-02
347	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.07E-01	1.99E+00	2.30E-01	1.15E-02
348	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.07E-01	1.99E+00	2.30E-01	1.15E-02
349	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.08E-01	2.00E+00	2.31E-01	1.15E-02
350	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.08E-01	2.01E+00	2.31E-01	1.16E-02
351	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.08E-01	2.01E+00	2.32E-01	1.16E-02
352	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.09E-01	2.02E+00	2.33E-01	1.16E-02
353	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.09E-01	2.02E+00	2.33E-01	1.17E-02
354	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.09E-01	2.03E+00	2.34E-01	1.17E-02
355	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.10E-01	2.03E+00	2.35E-01	1.17E-02
356	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.10E-01	2.04E+00	2.35E-01	1.18E-02
357	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.10E-01	2.05E+00	2.36E-01	1.18E-02
358	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.10E-01	2.05E+00	2.37E-01	1.18E-02
359	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.11E-01	2.06E+00	2.37E-01	1.19E-02
360	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.11E-01	2.06E+00	2.38E-01	1.19E-02
361	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.11E-01	2.07E+00	2.39E-01	1.19E-02
362	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.12E-01	2.07E+00	2.39E-01	1.20E-02
363	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.12E-01	2.08E+00	2.40E-01	1.20E-02
364	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.12E-01	2.09E+00	2.41E-01	1.20E-02
365	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.13E-01	2.09E+00	2.41E-01	1.21E-02
366	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.13E-01	2.10E+00	2.42E-01	1.21E-02
367	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.13E-01	2.10E+00	2.43E-01	1.21E-02
368	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.14E-01	2.11E+00	2.43E-01	1.22E-02
369	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.14E-01	2.12E+00	2.44E-01	1.22E-02
370	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.14E-01	2.12E+00	2.45E-01	1.22E-02
371	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.15E-01	2.13E+00	2.45E-01	1.23E-02
372	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.15E-01	2.13E+00	2.46E-01	1.23E-02
373	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.15E-01	2.14E+00	2.47E-01	1.23E-02
374	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.15E-01	2.14E+00	2.47E-01	1.24E-02
375	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.16E-01	2.15E+00	2.48E-01	1.24E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
376	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.16E-01	2.16E+00	2.49E-01	1.24E-02
377	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.16E-01	2.16E+00	2.49E-01	1.25E-02
378	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.17E-01	2.17E+00	2.50E-01	1.25E-02
379	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.17E-01	2.17E+00	2.51E-01	1.25E-02
380	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.17E-01	2.18E+00	2.51E-01	1.26E-02
381	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.18E-01	2.18E+00	2.52E-01	1.26E-02
382	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.18E-01	2.19E+00	2.53E-01	1.26E-02
383	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.18E-01	2.20E+00	2.53E-01	1.27E-02
384	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.19E-01	2.20E+00	2.54E-01	1.27E-02
385	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.19E-01	2.21E+00	2.55E-01	1.27E-02
386	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.19E-01	2.21E+00	2.55E-01	1.28E-02
387	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.19E-01	2.22E+00	2.56E-01	1.28E-02
388	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.20E-01	2.22E+00	2.57E-01	1.28E-02
389	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.20E-01	2.23E+00	2.57E-01	1.29E-02
390	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.20E-01	2.24E+00	2.58E-01	1.29E-02
391	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.21E-01	2.24E+00	2.59E-01	1.29E-02
392	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.21E-01	2.25E+00	2.59E-01	1.30E-02
393	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.21E-01	2.25E+00	2.60E-01	1.30E-02
394	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.22E-01	2.26E+00	2.61E-01	1.30E-02
395	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.22E-01	2.26E+00	2.61E-01	1.31E-02
396	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.22E-01	2.27E+00	2.62E-01	1.31E-02
397	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.23E-01	2.28E+00	2.63E-01	1.31E-02
398	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.23E-01	2.28E+00	2.63E-01	1.32E-02
399	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.23E-01	2.29E+00	2.64E-01	1.32E-02
400	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.23E-01	2.29E+00	2.65E-01	1.32E-02
401	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.24E-01	2.30E+00	2.65E-01	1.33E-02
402	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.24E-01	2.30E+00	2.66E-01	1.33E-02
403	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.24E-01	2.31E+00	2.67E-01	1.33E-02
404	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.25E-01	2.32E+00	2.67E-01	1.34E-02
405	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.25E-01	2.32E+00	2.68E-01	1.34E-02
406	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.25E-01	2.33E+00	2.69E-01	1.34E-02
407	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.26E-01	2.33E+00	2.69E-01	1.35E-02
408	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.26E-01	2.34E+00	2.70E-01	1.35E-02
409	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.26E-01	2.34E+00	2.71E-01	1.35E-02
410	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.27E-01	2.35E+00	2.71E-01	1.36E-02
411	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.27E-01	2.36E+00	2.72E-01	1.36E-02
412	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.27E-01	2.36E+00	2.72E-01	1.36E-02
413	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.27E-01	2.37E+00	2.73E-01	1.37E-02
414	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.28E-01	2.37E+00	2.74E-01	1.37E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
415	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.28E-01	2.38E+00	2.74E-01	1.37E-02
416	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.28E-01	2.38E+00	2.75E-01	1.38E-02
417	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.29E-01	2.39E+00	2.76E-01	1.38E-02
418	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.29E-01	2.40E+00	2.76E-01	1.38E-02
419	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.29E-01	2.40E+00	2.77E-01	1.39E-02
420	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.30E-01	2.41E+00	2.78E-01	1.39E-02
421	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.30E-01	2.41E+00	2.78E-01	1.39E-02
422	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.30E-01	2.42E+00	2.79E-01	1.40E-02
423	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.31E-01	2.42E+00	2.80E-01	1.40E-02
424	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.31E-01	2.43E+00	2.80E-01	1.40E-02
425	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.31E-01	2.44E+00	2.81E-01	1.41E-02
426	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.31E-01	2.44E+00	2.82E-01	1.41E-02
427	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.32E-01	2.45E+00	2.82E-01	1.41E-02
428	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.32E-01	2.45E+00	2.83E-01	1.42E-02
429	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.32E-01	2.46E+00	2.84E-01	1.42E-02
430	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.33E-01	2.46E+00	2.84E-01	1.42E-02
431	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.33E-01	2.47E+00	2.85E-01	1.43E-02
432	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.33E-01	2.48E+00	2.86E-01	1.43E-02
433	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.34E-01	2.48E+00	2.86E-01	1.43E-02
434	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.34E-01	2.49E+00	2.87E-01	1.44E-02
435	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.34E-01	2.49E+00	2.88E-01	1.44E-02
436	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.35E-01	2.50E+00	2.88E-01	1.44E-02
437	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.35E-01	2.50E+00	2.89E-01	1.45E-02
438	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.35E-01	2.51E+00	2.90E-01	1.45E-02
439	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.35E-01	2.52E+00	2.90E-01	1.45E-02
440	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.36E-01	2.52E+00	2.91E-01	1.46E-02
441	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.36E-01	2.53E+00	2.92E-01	1.46E-02
442	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.36E-01	2.53E+00	2.92E-01	1.46E-02
443	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.37E-01	2.54E+00	2.93E-01	1.46E-02
444	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.37E-01	2.55E+00	2.94E-01	1.47E-02
445	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.37E-01	2.55E+00	2.94E-01	1.47E-02
446	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.38E-01	2.56E+00	2.95E-01	1.47E-02
447	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.38E-01	2.56E+00	2.96E-01	1.48E-02
448	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.38E-01	2.57E+00	2.96E-01	1.48E-02
449	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.39E-01	2.57E+00	2.97E-01	1.48E-02
450	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.39E-01	2.58E+00	2.98E-01	1.49E-02
451	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.39E-01	2.59E+00	2.98E-01	1.49E-02
452	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.40E-01	2.59E+00	2.99E-01	1.49E-02
453	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.40E-01	2.60E+00	3.00E-01	1.50E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
454	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.40E-01	2.60E+00	3.00E-01	1.50E-02
455	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.40E-01	2.61E+00	3.01E-01	1.50E-02
456	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.41E-01	2.61E+00	3.02E-01	1.51E-02
457	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.41E-01	2.62E+00	3.02E-01	1.51E-02
458	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.41E-01	2.63E+00	3.03E-01	1.51E-02
459	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.42E-01	2.63E+00	3.04E-01	1.52E-02
460	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.42E-01	2.64E+00	3.04E-01	1.52E-02
461	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.42E-01	2.64E+00	3.05E-01	1.52E-02
462	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.43E-01	2.65E+00	3.06E-01	1.53E-02
463	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.43E-01	2.65E+00	3.06E-01	1.53E-02
464	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.43E-01	2.66E+00	3.07E-01	1.53E-02
465	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.44E-01	2.67E+00	3.08E-01	1.54E-02
466	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.44E-01	2.67E+00	3.08E-01	1.54E-02
467	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.44E-01	2.68E+00	3.09E-01	1.54E-02
468	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.44E-01	2.68E+00	3.10E-01	1.55E-02
469	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.45E-01	2.69E+00	3.10E-01	1.55E-02
470	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.45E-01	2.69E+00	3.11E-01	1.55E-02
471	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.45E-01	2.70E+00	3.12E-01	1.56E-02
472	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.46E-01	2.71E+00	3.12E-01	1.56E-02
473	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.46E-01	2.71E+00	3.13E-01	1.56E-02
474	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.46E-01	2.72E+00	3.13E-01	1.57E-02
475	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.47E-01	2.72E+00	3.14E-01	1.57E-02
476	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.47E-01	2.73E+00	3.15E-01	1.57E-02
477	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.47E-01	2.73E+00	3.15E-01	1.58E-02
478	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.48E-01	2.74E+00	3.16E-01	1.58E-02
479	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.48E-01	2.75E+00	3.17E-01	1.58E-02
480	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.48E-01	2.75E+00	3.17E-01	1.59E-02
481	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.48E-01	2.76E+00	3.18E-01	1.59E-02
482	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.49E-01	2.76E+00	3.19E-01	1.59E-02
483	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.49E-01	2.77E+00	3.19E-01	1.60E-02
484	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.49E-01	2.77E+00	3.20E-01	1.60E-02
485	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.50E-01	2.78E+00	3.21E-01	1.60E-02
486	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.50E-01	2.79E+00	3.21E-01	1.61E-02
487	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.50E-01	2.79E+00	3.22E-01	1.61E-02
488	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.51E-01	2.80E+00	3.23E-01	1.61E-02
489	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.51E-01	2.80E+00	3.23E-01	1.62E-02
490	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.51E-01	2.81E+00	3.24E-01	1.62E-02
491	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.52E-01	2.81E+00	3.25E-01	1.62E-02
492	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.52E-01	2.82E+00	3.25E-01	1.63E-02

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AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
493	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.52E-01	2.83E+00	3.26E-01	1.63E-02
494	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.52E-01	2.83E+00	3.27E-01	1.63E-02
495	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.53E-01	2.84E+00	3.27E-01	1.64E-02
496	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.53E-01	2.84E+00	3.28E-01	1.64E-02
497	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.53E-01	2.85E+00	3.29E-01	1.64E-02
498	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.54E-01	2.85E+00	3.29E-01	1.65E-02
499	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.54E-01	2.86E+00	3.30E-01	1.65E-02
500	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.54E-01	2.87E+00	3.31E-01	1.65E-02
501	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.55E-01	2.87E+00	3.31E-01	1.66E-02
502	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.55E-01	2.88E+00	3.32E-01	1.66E-02
503	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.55E-01	2.88E+00	3.33E-01	1.66E-02
504	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.56E-01	2.89E+00	3.33E-01	1.67E-02
505	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.56E-01	2.89E+00	3.34E-01	1.67E-02
506	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.56E-01	2.90E+00	3.35E-01	1.67E-02
507	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.56E-01	2.91E+00	3.35E-01	1.68E-02
508	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.57E-01	2.91E+00	3.36E-01	1.68E-02
509	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.57E-01	2.92E+00	3.37E-01	1.68E-02
510	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.57E-01	2.92E+00	3.37E-01	1.69E-02
511	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.58E-01	2.93E+00	3.38E-01	1.69E-02
512	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.58E-01	2.93E+00	3.39E-01	1.69E-02
513	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.58E-01	2.94E+00	3.39E-01	1.70E-02
514	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.59E-01	2.95E+00	3.40E-01	1.70E-02
515	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.59E-01	2.95E+00	3.41E-01	1.70E-02
516	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.59E-01	2.96E+00	3.41E-01	1.71E-02
517	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.60E-01	2.96E+00	3.42E-01	1.71E-02
518	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.60E-01	2.97E+00	3.43E-01	1.71E-02
519	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.60E-01	2.97E+00	3.43E-01	1.72E-02
520	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.60E-01	2.98E+00	3.44E-01	1.72E-02
521	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.61E-01	2.99E+00	3.45E-01	1.72E-02
522	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.61E-01	2.99E+00	3.45E-01	1.73E-02
523	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.61E-01	3.00E+00	3.46E-01	1.73E-02
524	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.62E-01	3.00E+00	3.47E-01	1.73E-02
525	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.62E-01	3.01E+00	3.47E-01	1.74E-02
526	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.62E-01	3.02E+00	3.48E-01	1.74E-02
527	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.63E-01	3.02E+00	3.49E-01	1.74E-02
528	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.63E-01	3.03E+00	3.49E-01	1.75E-02
529	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.63E-01	3.03E+00	3.50E-01	1.75E-02
530	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.64E-01	3.04E+00	3.51E-01	1.75E-02
531	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.64E-01	3.04E+00	3.51E-01	1.76E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
532	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.64E-01	3.05E+00	3.52E-01	1.76E-02
533	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.65E-01	3.06E+00	3.53E-01	1.76E-02
534	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.65E-01	3.06E+00	3.53E-01	1.77E-02
535	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.65E-01	3.07E+00	3.54E-01	1.77E-02
536	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.65E-01	3.07E+00	3.55E-01	1.77E-02
537	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.66E-01	3.08E+00	3.55E-01	1.78E-02
538	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.66E-01	3.08E+00	3.56E-01	1.78E-02
539	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.66E-01	3.09E+00	3.56E-01	1.78E-02
540	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.67E-01	3.10E+00	3.57E-01	1.79E-02
541	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.67E-01	3.10E+00	3.58E-01	1.79E-02
542	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.67E-01	3.11E+00	3.58E-01	1.79E-02
543	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.68E-01	3.11E+00	3.59E-01	1.80E-02
544	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.68E-01	3.12E+00	3.60E-01	1.80E-02
545	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.68E-01	3.12E+00	3.60E-01	1.80E-02
546	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.69E-01	3.13E+00	3.61E-01	1.81E-02
547	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.69E-01	3.14E+00	3.62E-01	1.81E-02
548	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.69E-01	3.14E+00	3.62E-01	1.81E-02
549	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.69E-01	3.15E+00	3.63E-01	1.82E-02
550	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.70E-01	3.15E+00	3.64E-01	1.82E-02
551	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.70E-01	3.16E+00	3.64E-01	1.82E-02
552	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.70E-01	3.16E+00	3.65E-01	1.83E-02
553	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.71E-01	3.17E+00	3.66E-01	1.83E-02
554	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.71E-01	3.18E+00	3.66E-01	1.83E-02
555	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.71E-01	3.18E+00	3.67E-01	1.84E-02
556	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.72E-01	3.19E+00	3.68E-01	1.84E-02
557	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.72E-01	3.19E+00	3.68E-01	1.84E-02
558	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.72E-01	3.20E+00	3.69E-01	1.85E-02
559	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.73E-01	3.20E+00	3.70E-01	1.85E-02
560	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.73E-01	3.21E+00	3.70E-01	1.85E-02
561	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.73E-01	3.22E+00	3.71E-01	1.86E-02
562	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.73E-01	3.22E+00	3.72E-01	1.86E-02
563	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.74E-01	3.23E+00	3.72E-01	1.86E-02
564	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.74E-01	3.23E+00	3.73E-01	1.87E-02
565	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.74E-01	3.24E+00	3.74E-01	1.87E-02
566	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.75E-01	3.24E+00	3.74E-01	1.87E-02
567	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.75E-01	3.25E+00	3.75E-01	1.88E-02
568	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.75E-01	3.26E+00	3.76E-01	1.88E-02
569	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.76E-01	3.26E+00	3.76E-01	1.88E-02
570	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.76E-01	3.27E+00	3.77E-01	1.88E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
571	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.76E-01	3.27E+00	3.78E-01	1.89E-02
572	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.77E-01	3.28E+00	3.78E-01	1.89E-02
573	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.77E-01	3.28E+00	3.79E-01	1.89E-02
574	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.77E-01	3.29E+00	3.80E-01	1.90E-02
575	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.77E-01	3.30E+00	3.80E-01	1.90E-02
576	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.78E-01	3.30E+00	3.81E-01	1.90E-02
577	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.78E-01	3.31E+00	3.82E-01	1.91E-02
578	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.78E-01	3.31E+00	3.82E-01	1.91E-02
579	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.79E-01	3.32E+00	3.83E-01	1.91E-02
580	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.79E-01	3.32E+00	3.84E-01	1.92E-02
581	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.79E-01	3.33E+00	3.84E-01	1.92E-02
582	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.80E-01	3.34E+00	3.85E-01	1.92E-02
583	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.80E-01	3.34E+00	3.86E-01	1.93E-02
584	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.80E-01	3.35E+00	3.86E-01	1.93E-02
585	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.81E-01	3.35E+00	3.87E-01	1.93E-02
586	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.81E-01	3.36E+00	3.88E-01	1.94E-02
587	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.81E-01	3.36E+00	3.88E-01	1.94E-02
588	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.81E-01	3.37E+00	3.89E-01	1.94E-02
589	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.82E-01	3.38E+00	3.90E-01	1.95E-02
590	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.82E-01	3.38E+00	3.90E-01	1.95E-02
591	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.82E-01	3.39E+00	3.91E-01	1.95E-02
592	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.83E-01	3.39E+00	3.92E-01	1.96E-02
593	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.83E-01	3.40E+00	3.92E-01	1.96E-02
594	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.83E-01	3.40E+00	3.93E-01	1.96E-02
595	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.84E-01	3.41E+00	3.94E-01	1.97E-02
596	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.84E-01	3.42E+00	3.94E-01	1.97E-02
597	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.84E-01	3.42E+00	3.95E-01	1.97E-02
598	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.85E-01	3.43E+00	3.96E-01	1.98E-02
599	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.85E-01	3.43E+00	3.96E-01	1.98E-02
600	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.85E-01	3.44E+00	3.97E-01	1.98E-02
601	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.85E-01	3.44E+00	3.97E-01	1.99E-02
602	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.86E-01	3.45E+00	3.98E-01	1.99E-02
603	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.86E-01	3.46E+00	3.99E-01	1.99E-02
604	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.86E-01	3.46E+00	3.99E-01	2.00E-02
605	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.87E-01	3.47E+00	4.00E-01	2.00E-02
606	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.87E-01	3.47E+00	4.01E-01	2.00E-02
607	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.87E-01	3.48E+00	4.01E-01	2.01E-02
608	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.88E-01	3.49E+00	4.02E-01	2.01E-02
609	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.88E-01	3.49E+00	4.03E-01	2.01E-02

Attachment A
AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
610	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.88E-01	3.50E+00	4.03E-01	2.02E-02
611	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.89E-01	3.50E+00	4.04E-01	2.02E-02
612	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.89E-01	3.51E+00	4.05E-01	2.02E-02
613	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.89E-01	3.51E+00	4.05E-01	2.03E-02
614	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.90E-01	3.52E+00	4.06E-01	2.03E-02
615	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.90E-01	3.53E+00	4.07E-01	2.03E-02
616	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.90E-01	3.53E+00	4.07E-01	2.04E-02
617	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.90E-01	3.54E+00	4.08E-01	2.04E-02
618	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.91E-01	3.54E+00	4.09E-01	2.04E-02
619	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.91E-01	3.55E+00	4.09E-01	2.05E-02
620	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.91E-01	3.55E+00	4.10E-01	2.05E-02
621	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.92E-01	3.56E+00	4.11E-01	2.05E-02
622	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.92E-01	3.57E+00	4.11E-01	2.06E-02
623	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.92E-01	3.57E+00	4.12E-01	2.06E-02
624	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.93E-01	3.58E+00	4.13E-01	2.06E-02
625	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.93E-01	3.58E+00	4.13E-01	2.07E-02
626	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.93E-01	3.59E+00	4.14E-01	2.07E-02
627	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.94E-01	3.59E+00	4.15E-01	2.07E-02
628	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.94E-01	3.60E+00	4.15E-01	2.08E-02
629	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.94E-01	3.61E+00	4.16E-01	2.08E-02
630	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.94E-01	3.61E+00	4.17E-01	2.08E-02
631	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.95E-01	3.62E+00	4.17E-01	2.09E-02
632	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.95E-01	3.62E+00	4.18E-01	2.09E-02
633	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.95E-01	3.63E+00	4.19E-01	2.09E-02
634	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.96E-01	3.63E+00	4.19E-01	2.10E-02
635	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.96E-01	3.64E+00	4.20E-01	2.10E-02
636	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.96E-01	3.65E+00	4.21E-01	2.10E-02
637	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.97E-01	3.65E+00	4.21E-01	2.11E-02
638	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.97E-01	3.66E+00	4.22E-01	2.11E-02
639	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.97E-01	3.66E+00	4.23E-01	2.11E-02
640	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.98E-01	3.67E+00	4.23E-01	2.12E-02
641	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.98E-01	3.67E+00	4.24E-01	2.12E-02
642	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.98E-01	3.68E+00	4.25E-01	2.12E-02
643	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.98E-01	3.69E+00	4.25E-01	2.13E-02
644	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.99E-01	3.69E+00	4.26E-01	2.13E-02
645	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.99E-01	3.70E+00	4.27E-01	2.13E-02
646	1.40E-01	2.60E+00	3.00E-01	1.50E-02	1.99E-01	3.70E+00	4.27E-01	2.14E-02
647	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.00E-01	3.71E+00	4.28E-01	2.14E-02
648	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.00E-01	3.71E+00	4.29E-01	2.14E-02

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AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
649	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.00E-01	3.72E+00	4.29E-01	2.15E-02
650	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.01E-01	3.73E+00	4.30E-01	2.15E-02
651	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.01E-01	3.73E+00	4.31E-01	2.15E-02
652	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.01E-01	3.74E+00	4.31E-01	2.16E-02
653	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.02E-01	3.74E+00	4.32E-01	2.16E-02
654	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.02E-01	3.75E+00	4.33E-01	2.16E-02
655	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.02E-01	3.75E+00	4.33E-01	2.17E-02
656	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.02E-01	3.76E+00	4.34E-01	2.17E-02
657	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.03E-01	3.77E+00	4.35E-01	2.17E-02
658	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.03E-01	3.77E+00	4.35E-01	2.18E-02
659	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.03E-01	3.78E+00	4.36E-01	2.18E-02
660	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.04E-01	3.78E+00	4.37E-01	2.18E-02
661	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.04E-01	3.79E+00	4.37E-01	2.19E-02
662	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.04E-01	3.79E+00	4.38E-01	2.19E-02
663	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.05E-01	3.80E+00	4.38E-01	2.19E-02
664	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.05E-01	3.81E+00	4.39E-01	2.20E-02
665	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.05E-01	3.81E+00	4.40E-01	2.20E-02
666	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.06E-01	3.82E+00	4.40E-01	2.20E-02
667	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.06E-01	3.82E+00	4.41E-01	2.21E-02
668	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.06E-01	3.83E+00	4.42E-01	2.21E-02
669	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.06E-01	3.83E+00	4.42E-01	2.21E-02
670	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.07E-01	3.84E+00	4.43E-01	2.22E-02
671	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.07E-01	3.85E+00	4.44E-01	2.22E-02
672	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.07E-01	3.85E+00	4.44E-01	2.22E-02
673	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.08E-01	3.86E+00	4.45E-01	2.23E-02
674	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.08E-01	3.86E+00	4.46E-01	2.23E-02
675	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.08E-01	3.87E+00	4.46E-01	2.23E-02
676	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.09E-01	3.87E+00	4.47E-01	2.24E-02
677	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.09E-01	3.88E+00	4.48E-01	2.24E-02
678	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.09E-01	3.89E+00	4.48E-01	2.24E-02
679	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.10E-01	3.89E+00	4.49E-01	2.25E-02
680	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.10E-01	3.90E+00	4.50E-01	2.25E-02
681	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.10E-01	3.90E+00	4.50E-01	2.25E-02
682	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.10E-01	3.91E+00	4.51E-01	2.26E-02
683	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.11E-01	3.91E+00	4.52E-01	2.26E-02
684	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.11E-01	3.92E+00	4.52E-01	2.26E-02
685	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.11E-01	3.93E+00	4.53E-01	2.27E-02
686	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.12E-01	3.93E+00	4.54E-01	2.27E-02
687	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.12E-01	3.94E+00	4.54E-01	2.27E-02

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AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
688	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.12E-01	3.94E+00	4.55E-01	2.28E-02
689	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.13E-01	3.95E+00	4.56E-01	2.28E-02
690	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.13E-01	3.96E+00	4.56E-01	2.28E-02
691	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.13E-01	3.96E+00	4.57E-01	2.29E-02
692	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.14E-01	3.97E+00	4.58E-01	2.29E-02
693	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.14E-01	3.97E+00	4.58E-01	2.29E-02
694	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.14E-01	3.98E+00	4.59E-01	2.30E-02
695	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.15E-01	3.98E+00	4.60E-01	2.30E-02
696	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.15E-01	3.99E+00	4.60E-01	2.30E-02
697	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.15E-01	4.00E+00	4.61E-01	2.30E-02
698	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.15E-01	4.00E+00	4.62E-01	2.31E-02
699	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.16E-01	4.01E+00	4.62E-01	2.31E-02
700	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.16E-01	4.01E+00	4.63E-01	2.31E-02
701	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.16E-01	4.02E+00	4.64E-01	2.32E-02
702	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.17E-01	4.02E+00	4.64E-01	2.32E-02
703	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.17E-01	4.03E+00	4.65E-01	2.32E-02
704	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.17E-01	4.04E+00	4.66E-01	2.33E-02
705	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.18E-01	4.04E+00	4.66E-01	2.33E-02
706	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.18E-01	4.05E+00	4.67E-01	2.33E-02
707	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.18E-01	4.05E+00	4.68E-01	2.34E-02
708	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.19E-01	4.06E+00	4.68E-01	2.34E-02
709	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.19E-01	4.06E+00	4.69E-01	2.34E-02
710	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.19E-01	4.07E+00	4.70E-01	2.35E-02
711	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.19E-01	4.08E+00	4.70E-01	2.35E-02
712	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.20E-01	4.08E+00	4.71E-01	2.35E-02
713	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.20E-01	4.09E+00	4.72E-01	2.36E-02
714	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.20E-01	4.09E+00	4.72E-01	2.36E-02
715	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.21E-01	4.10E+00	4.73E-01	2.36E-02
716	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.21E-01	4.10E+00	4.74E-01	2.37E-02
717	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.21E-01	4.11E+00	4.74E-01	2.37E-02
718	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.22E-01	4.12E+00	4.75E-01	2.37E-02
719	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.22E-01	4.12E+00	4.76E-01	2.38E-02
720	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.22E-01	4.13E+00	4.76E-01	2.38E-02
721	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.23E-01	4.13E+00	4.77E-01	2.38E-02
722	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.23E-01	4.14E+00	4.78E-01	2.39E-02
723	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.23E-01	4.14E+00	4.78E-01	2.39E-02
724	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.23E-01	4.15E+00	4.79E-01	2.39E-02
725	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.24E-01	4.16E+00	4.80E-01	2.40E-02
726	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.24E-01	4.16E+00	4.80E-01	2.40E-02

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AltAir Renewable Fuels Project
Table A4 - Non-Road Diesel Tier 4 Emission Factors

HP	VOC (g/lbhp-hr)	CO (g/lbhp-hr)	NOx (g/lbhp-hr)	PM (g/lbhp-hr)	VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	PM (lb/hr)
727	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.24E-01	4.17E+00	4.81E-01	2.40E-02
728	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.25E-01	4.17E+00	4.81E-01	2.41E-02
729	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.25E-01	4.18E+00	4.82E-01	2.41E-02
730	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.25E-01	4.18E+00	4.83E-01	2.41E-02
731	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.26E-01	4.19E+00	4.83E-01	2.42E-02
732	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.26E-01	4.20E+00	4.84E-01	2.42E-02
733	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.26E-01	4.20E+00	4.85E-01	2.42E-02
734	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.27E-01	4.21E+00	4.85E-01	2.43E-02
735	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.27E-01	4.21E+00	4.86E-01	2.43E-02
736	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.27E-01	4.22E+00	4.87E-01	2.43E-02
737	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.27E-01	4.22E+00	4.87E-01	2.44E-02
738	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.28E-01	4.23E+00	4.88E-01	2.44E-02
739	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.28E-01	4.24E+00	4.89E-01	2.44E-02
740	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.28E-01	4.24E+00	4.89E-01	2.45E-02
741	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.29E-01	4.25E+00	4.90E-01	2.45E-02
742	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.29E-01	4.25E+00	4.91E-01	2.45E-02
743	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.29E-01	4.26E+00	4.91E-01	2.46E-02
744	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.30E-01	4.26E+00	4.92E-01	2.46E-02
745	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.30E-01	4.27E+00	4.93E-01	2.46E-02
746	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.30E-01	4.28E+00	4.93E-01	2.47E-02
747	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.31E-01	4.28E+00	4.94E-01	2.47E-02
748	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.31E-01	4.29E+00	4.95E-01	2.47E-02
749	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.31E-01	4.29E+00	4.95E-01	2.48E-02
750	1.40E-01	2.60E+00	3.00E-01	1.50E-02	2.31E-01	4.30E+00	4.96E-01	2.48E-02

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Table A5 - Construction Equipment Emissions

		Year 1 by Peak Day in the Month											
Equipment (Pieces per Day)	**Hours (hr/day)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	4	0	0	0	0	0	0	0	0	0	0	0	0
Small Loader/Backhoe (Cat 416-Cat 436)	4	16	16	16	16	16	16	16	16	17	17	17	18
Cat 14 Grader	4	0	0	0	0	0	0	0	0	0	0	0	0
10-19 MT (SM EX 312 - 318)	4	0	0	0	0	0	0	0	0	2	4	4	4
20 TO 25 MT (CAT 320,321)	4	0	0	0	0	0	0	0	0	2	3	3	6
30 TO 35 MT (CAT 328,329)	4	0	0	0	0	0	0	0	0	0	0	0	1
40 - 48" Single Drum / Smooth / Vibro	8	0	0	0	0	0	0	0	0	0	0	0	2
78 - 84" Single Drum / Combo / Vibro	8	0	0	0	0	0	0	0	0	0	0	0	0
Walk Behind Roller (2-Drum) (RAMMEX)	8	0	0	0	0	0	0	0	0	1	1	2	6
Plate Compactor	8	0	0	0	0	0	0	0	0	1	1	1	1
Rough Terrain Crane 70-79 Ton	4	0	0	0	0	0	0	0	0	0	0	0	0
Rough Terrain Crane 80-89 Ton	4	0	0	0	0	0	0	0	0	1	1	1	1
Rough Terrain Crane 90-99 Ton	4	0	0	0	0	0	0	2	2	2	2	2	2
Rough Terrain Crane 90-99 Ton	4	6	6	3	3	3	0	0	0	1	1	1	1
Rough Terrain Crane 100-110 Ton	4	1	2	3	2	0	0	0	0	0	0	0	0
Carry Deck Crane <15 Ton	4	0	0	0	0	0	0	0	0	0	0	0	0
Carry Deck Crane >15 Ton	4	0	0	0	0	0	0	0	0	0	0	0	0
Crane Hyd/C 130-150 Ton	4	0	0	2	2	2	2	2	2	2	2	2	2
Crane Hyd/C 265 Ton	4	0	0	2	2	2	2	2	2	2	2	2	2
175-225 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	1
175-225 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
175-225 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
230-250 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
601- 800 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	0	0	0	0	0
185 CFM Air Compressor - Diesel	8	4	4	4	4	4	4	6	6	6	6	6	6
250 - 300 CFM Air Compressor - Diesel	8	0	0	0	0	0	0	0	0	0	1	1	1
375 CFM Air Compressor - Diesel	8	5	10	10	10	10	10	5	5	5	5	5	5
1600 CFM Air Compressor - Diesel	8	0	0	0	0	0	0	0	0	0	0	0	0
300 - 350 Amp Diesel Welder	8	6	6	10	10	10	10	8	8	8	9	9	9
1 - 24 KW Generator	8	2	2	2	2	2	2	4	4	4	4	4	4
Portable Light Plant - Moon Glo's	8	10	10	10	10	10	10	10	10	10	10	10	12
Road Broom	4	3	3	3	3	3	3	3	3	4	4	4	4
Road Broom	4	0	0	0	0	0	0	0	0	0	0	0	0
Cat IT28, 928, 930, 938 Loader	4	0	0	0	0	0	0	0	0	1	1	1	2
Cat 966, JA744, WA500, L150 Loader	4	1	1	1	1	1	1	1	1	1	3	3	3
Skid Steer-Wheeled	4	0	0	0	0	0	0	0	0	0	0	0	0
Skid Steer - Track	4	0	0	0	4	4	4	4	4	4	6	6	4
Rough Terrain Scissor Lift	4	10	10	10	10	10	10	10	12	12	12	12	4
40' Manlift	4	0	0	0	0	0	0	1	1	1	2	2	2
40' Manlift	4	8	8	8	8	8	8	8	8	8	8	8	8
60' Manlift	4	2	2	2	2	2	2	2	2	2	2	2	2
80' Manlift	4	0	0	0	0	0	0	0	0	0	0	0	0
120' Manlift	4	0	0	0	0	0	0	0	0	0	0	0	0
135' Manlift	4	0	0	0	0	0	0	0	0	0	0	0	0
150' Manlift	4	0	0	0	0	0	0	0	0	0	0	0	0
Forklift	4	0	0	0	0	0	0	0	0	0	0	0	0
30,000 lb and Greater Straight Mast	4	0	0	0	0	0	0	0	0	0	1	1	1
30,000 lb and Greater Straight Mast	4	0	0	0	0	0	0	0	0	0	0	0	0
6,000 - 8,000 lb Extendable	4	0	0	0	0	0	0	0	0	0	0	0	0
9,000 - 10,000 lb Extendable	4	0	0	0	0	0	0	1	1	1	2	2	2
9,000 - 10,000 lb Extendable	4	0	0	0	0	0	0	2	2	2	2	3	3
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	4	0	0	0	0	0	0	0	0	0	0	0	2
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	4	0	0	0	0	0	0	0	0	0	0	0	2
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	4	0	0	0	0	0	0	0	0	0	0	0	2
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	4	0	0	0	0	0	0	0	0	0	0	0	1
Fusion Machine >36" Ips	4	0	0	0	0	0	0	0	0	0	0	0	1

Number of pieces of equipment operating in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
VOC (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.013	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.85	0.90
Cat 14 Grader	0.064	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.31	0.31	0.31
20 TO 25 MT (CAT 320,321)	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.32	0.32	0.64
30 TO 35 MT (CAT 328,329)	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
40 - 48" Single Drum / Smooth / Vibro	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.65	1.30	3.90
Plate Compactor	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03
Rough Terrain Crane 70-79 Ton	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20
Rough Terrain Crane 90-99 Ton	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.40	0.40	0.40
Rough Terrain Crane 90-99 Ton	0.050	1.20	1.20	0.60	0.60	0.60	0.00	0.00	0.00	0.20	0.20	0.20	0.20
Rough Terrain Crane 100-110 Ton	0.050	0.20	0.40	0.60	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.050	0.00	0.00	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Crane Hyd/C 265 Ton	0.063	0.00	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
175-225 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
175-225 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.231	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.20	0.20	0.20	0.20	0.20	0.20	0.29	0.29	0.29	0.29	0.29	0.29
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05
375 CFM Air Compressor - Diesel	0.006	0.24	0.49	0.49	0.49	0.49	0.49	0.24	0.24	0.24	0.24	0.24	0.24
1600 CFM Air Compressor - Diesel	0.039	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.44	0.44	0.74	0.74	0.74	0.74	0.59	0.59	0.59	0.67	0.67	0.67
1 - 24 KW Generator	0.017	0.28	0.28	0.28	0.28	0.28	0.28	0.55	0.55	0.55	0.55	0.55	0.55
Portable Light Plant - Moon Glo's	0.071	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	6.80
Road Broom	0.023	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.37	0.37	0.37	0.37
Road Broom	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.17	0.17	0.33
Cat 966, JA744, WA500, L150 Loader	0.045	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.54	0.54	0.54
Skid Steer-Wheeled	0.013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.013	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.20
Rough Terrain Scissor Lift	0.005	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.25	0.25	0.25	0.25	0.08
40' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.04	0.04	0.04
40' Manlift	0.005	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
60' Manlift	0.005	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
80' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.13
30,000 lb and Greater Straight Mast	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.012	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.10	0.10	0.10
9,000 - 10,000 lb Extendable	0.012	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.14	0.14
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Fusion Machine >36" Ips	0.030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Total		9.90	10.34	11.14	11.14	10.74	10.14	10.69	10.73	12.49	13.52	14.22	20.98

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.208	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.208	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	14.16	14.16	14.16	14.99
Cat 14 Grader	0.262	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.242	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93	3.87	3.87	3.87
20 TO 25 MT (CAT 320,321)	0.380	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.04	4.56	4.56	9.12
30 TO 35 MT (CAT 328,329)	0.207	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
40 - 48" Single Drum / Smooth / Vibro	0.354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.66
78 - 84" Single Drum / Combo / Vibro	0.354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.79	1.79	3.58	10.74
Plate Compactor	0.026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.21	0.21
Rough Terrain Crane 70-79 Ton	0.248	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.248	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.99
Rough Terrain Crane 90-99 Ton	0.248	0.00	0.00	0.00	0.00	0.00	0.00	1.99	1.99	1.99	1.99	1.99	1.99
Rough Terrain Crane 90-99 Ton	0.248	5.96	5.96	2.98	2.98	2.98	0.00	0.00	0.00	0.99	0.99	0.99	0.99
Rough Terrain Crane 100-110 Ton	0.248	0.99	1.99	2.98	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.326	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.326	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.248	0.00	0.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99
Crane Hyd/C 265 Ton	0.504	0.00	0.00	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03
175-225 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
175-225 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.504	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	2.142	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	3.72	3.72	3.72	3.72	3.72	3.72	5.58	5.58	5.58	5.58	5.58	5.58
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.93
375 CFM Air Compressor - Diesel	0.116	4.65	9.31	9.31	9.31	9.31	9.31	4.65	4.65	4.65	4.65	4.65	4.65
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	2.08	2.08	3.46	3.46	3.46	3.46	2.77	2.77	2.77	3.12	3.12	3.12
1 - 24 KW Generator	0.206	3.30	3.30	3.30	3.30	3.30	3.30	6.60	6.60	6.60	6.60	6.60	6.60
Portable Light Plant - Moon Glo's	0.226	18.08	18.08	18.08	18.08	18.08	18.08	18.08	18.08	18.08	18.08	18.08	21.69
Road Broom	0.281	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.49	4.49	4.49	4.49
Road Broom	0.281	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.401	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	1.61	1.61	3.21
Cat 966, JA744, WA500, L150 Loader	0.214	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	2.57	2.57	2.57
Skid Steer-Wheeled	0.208	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.208	0.00	0.00	0.00	3.33	3.33	3.33	3.33	3.33	3.33	5.00	5.00	3.33
Rough Terrain Scissor Lift	0.098	3.90	3.90	3.90	3.90	3.90	3.90	3.90	4.68	4.68	4.68	4.68	1.56
40' Manlift	0.098	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.39	0.39	0.78	0.78	0.78
40' Manlift	0.098	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12
60' Manlift	0.098	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
80' Manlift	0.098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.335	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	1.34	1.34
30,000 lb and Greater Straight Mast	0.335	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.347	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.274	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	1.10	2.20	2.20	2.20
9,000 - 10,000 lb Extendable	0.274	0.00	0.00	0.00	0.00	0.00	0.00	2.20	2.20	2.20	2.20	3.29	3.29
Fusion Mach 2"lps-8"Dips (Tracstar 28)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68
Fusion Mach 4"lps-12"Dips (Tracstar 412)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68
Fusion Mach 6"lps-18"Dips (Tracstar 618)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68
Fusion Mach 12"lps-36"Dips(Tracstar 900)	0.196	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
Fusion Machine >36" lps	0.366	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46
Total		64.14	69.79	75.20	77.54	75.55	72.57	78.06	78.84	91.36	102.30	105.18	133.96

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
NOX (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.50	4.50	4.50	4.76
Cat 14 Grader	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.06	1.06	1.06
20 TO 25 MT (CAT 320,321)	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	1.39	1.39	2.78
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	1.26	2.52	7.56
Plate Compactor	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.79
Rough Terrain Crane 90-99 Ton	0.198	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.59	1.59	1.59	1.59	1.59
Rough Terrain Crane 90-99 Ton	0.198	4.76	4.76	2.38	2.38	2.38	0.00	0.00	0.00	0.79	0.79	0.79	0.79
Rough Terrain Crane 100-110 Ton	0.198	0.79	1.59	2.38	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.198	0.00	0.00	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Crane Hyd/C 265 Ton	0.397	0.00	0.00	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	2.93	2.93	2.93	2.93	2.93	2.93	4.39	4.39	4.39	4.39	4.39	4.39
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73	0.73	0.73
375 CFM Air Compressor - Diesel	0.092	3.66	7.32	7.32	7.32	7.32	7.32	3.66	3.66	3.66	3.66	3.66	3.66
1600 CFM Air Compressor - Diesel	0.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.068	3.26	3.26	5.43	5.43	5.43	5.43	4.34	4.34	4.34	4.88	4.88	4.88
1 - 24 KW Generator	0.165	2.64	2.64	2.64	2.64	2.64	2.64	5.27	5.27	5.27	5.27	5.27	5.27
Portable Light Plant - Moon Glo's	0.054	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	5.18
Road Broom	0.050	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.79	0.79	0.79	0.79
Road Broom	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.46	0.93
Cat 966, JA744, WA500, L150 Loader	0.198	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	2.38	2.38	2.38
Skid Steer-Wheeled	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.066	0.00	0.00	0.00	1.06	1.06	1.06	1.06	1.06	1.06	1.59	1.59	1.06
Rough Terrain Scissor Lift	0.092	3.66	3.66	3.66	3.66	3.66	3.66	3.66	4.39	4.39	4.39	4.39	1.46
40' Manlift	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.37	0.73	0.73	0.73
40' Manlift	0.092	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93
60' Manlift	0.092	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
80' Manlift	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.46
30,000 lb and Greater Straight Mast	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26	0.26	0.53	0.53	0.53
9,000 - 10,000 lb Extendable	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.79	0.79
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Fusion Machine >36" Ips	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Total		35.30	39.76	45.10	45.37	43.78	41.40	43.50	44.23	49.71	55.19	56.71	68.58

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
SOx (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Cat 14 Grader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Plate Compactor	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Crane Hyd/C 265 Ton	0.001	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1 - 24 KW Generator	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Portable Light Plant - Moon Glo's	0.000	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Rough Terrain Scissor Lift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
40' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
60' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.10	0.11	0.12	0.12	0.12	0.11	0.12	0.12	0.14	0.16	0.16	0.19

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM10 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.24
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.05	0.05
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.07	0.07	0.14
30 TO 35 MT (CAT 328,329)	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.06
Plate Compactor	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.24	0.24	0.12	0.12	0.12	0.00	0.00	0.00	0.04	0.04	0.04	0.04
Rough Terrain Crane 100-110 Ton	0.010	0.04	0.08	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Crane Hyd/C 265 Ton	0.020	0.00	0.00	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
375 CFM Air Compressor - Diesel	0.001	0.06	0.11	0.11	0.11	0.11	0.11	0.06	0.06	0.06	0.06	0.06	0.06
1600 CFM Air Compressor - Diesel	0.015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.06	0.06	0.10	0.10	0.10	0.10	0.08	0.08	0.08	0.09	0.09	0.09
1 - 24 KW Generator	0.002	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
Portable Light Plant - Moon Glo's	0.001	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.12
Road Broom	0.002	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.05
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.12	0.12	0.12
Skid Steer-Wheeled	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.003	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.05
Rough Terrain Scissor Lift	0.001	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.01
40' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
40' Manlift	0.001	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
60' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
80' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.03	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.04	0.04
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Machine >36" Ips	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Total		0.92	1.01	1.21	1.22	1.14	1.03	1.13	1.14	1.36	1.57	1.60	1.93

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM2.5 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.24
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.05	0.05
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.07	0.07	0.14
30 TO 35 MT (CAT 328,329)	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.06
Plate Compactor	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.24	0.24	0.12	0.12	0.12	0.00	0.00	0.00	0.04	0.04	0.04	0.04
Rough Terrain Crane 100-110 Ton	0.010	0.04	0.08	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Crane Hyd/C 265 Ton	0.020	0.00	0.00	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
375 CFM Air Compressor - Diesel	0.001	0.05	0.10	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05
1600 CFM Air Compressor - Diesel	0.013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.06	0.06	0.10	0.10	0.10	0.10	0.08	0.08	0.08	0.09	0.09	0.09
1 - 24 KW Generator	0.002	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
Portable Light Plant - Moon Glo's	0.001	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.12
Road Broom	0.002	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.05
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.12	0.12	0.12
Skid Steer-Wheeled	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.003	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.05
Rough Terrain Scissor Lift	0.001	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.01
40' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
40' Manlift	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
60' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
80' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.03	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.04	0.04
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fusion Machine >36" Ips	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Total		0.91	1.00	1.19	1.21	1.13	1.01	1.12	1.13	1.34	1.56	1.58	1.91

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO2 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	32.102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	32.102	2054.54	2054.54	2054.54	2054.54	2054.54	2054.54	2054.54	2054.54	2182.95	2182.95	2182.95	2311.36
Cat 14 Grader	103.037	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	36.200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	289.60	579.20	579.20	579.20
20 TO 25 MT (CAT 320,321)	64.939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	519.51	779.27	779.27	1558.54
30 TO 35 MT (CAT 328,329)	97.280	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	389.12
40 - 48" Single Drum / Smooth / Vibro	30.573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	489.16
78 - 84" Single Drum / Combo / Vibro	30.573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.02	97.02	194.05	582.15
Plate Compactor	4.310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.48	34.48	34.48	34.48
Rough Terrain Crane 70-79 Ton	74.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	74.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	296.01	296.01	296.01	296.01
Rough Terrain Crane 90-99 Ton	74.002	0.00	0.00	0.00	0.00	0.00	0.00	592.02	592.02	592.02	592.02	592.02	592.02
Rough Terrain Crane 90-99 Ton	74.002	1776.06	1776.06	888.03	888.03	888.03	0.00	0.00	0.00	296.01	296.01	296.01	296.01
Rough Terrain Crane 100-110 Ton	74.002	296.01	592.02	888.03	592.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	49.152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	49.152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	74.002	0.00	0.00	592.02	592.02	592.02	592.02	592.02	592.02	592.02	592.02	592.02	592.02
Crane Hyd/C 265 Ton	123.416	0.00	0.00	987.32	987.32	987.32	987.32	987.32	987.32	987.32	987.32	987.32	987.32
175-225 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	493.66
175-225 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.416	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	215.365	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	629.06	629.06	629.06	629.06	629.06	629.06	943.58	943.58	943.58	943.58	943.58	943.58
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	157.26	157.26	157.26
375 CFM Air Compressor - Diesel	19.658	786.32	1572.64	1572.64	1572.64	1572.64	1572.64	786.32	786.32	786.32	786.32	786.32	786.32
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	8.577	411.71	411.71	686.18	686.18	686.18	686.18	548.94	548.94	548.94	617.56	617.56	617.56
1 - 24 KW Generator	20.059	320.95	320.95	320.95	320.95	320.95	320.95	641.89	641.89	641.89	641.89	641.89	641.89
Portable Light Plant - Moon Glo's	6.906	552.44	552.44	552.44	552.44	552.44	552.44	552.44	552.44	552.44	552.44	552.44	662.93
Road Broom	38.581	462.97	462.97	462.97	462.97	462.97	462.97	462.97	462.97	617.30	617.30	617.30	617.30
Road Broom	38.581	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	63.041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	252.16	252.16	252.16	504.33
Cat 966, JA744, WA500, L150 Loader	86.704	346.82	346.82	346.82	346.82	346.82	346.82	346.82	346.82	346.82	1040.45	1040.45	1040.45
Skid Steer-Wheeled	32.102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	32.102	0.00	0.00	0.00	513.64	513.64	513.64	513.64	513.64	513.64	770.45	770.45	513.64
Rough Terrain Scissor Lift	18.396	735.84	735.84	735.84	735.84	735.84	735.84	735.84	883.01	883.01	883.01	883.01	294.34
40' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	73.58	73.58	73.58	147.17	147.17	147.17
40' Manlift	18.396	588.67	588.67	588.67	588.67	588.67	588.67	588.67	588.67	588.67	588.67	588.67	588.67
60' Manlift	18.396	147.17	147.17	147.17	147.17	147.17	147.17	147.17	147.17	147.17	147.17	147.17	147.17
80' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	45.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	58.331	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	233.32	233.32	233.32
30,000 lb and Greater Straight Mast	58.331	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	31.041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	45.051	0.00	0.00	0.00	0.00	0.00	0.00	180.20	180.20	180.20	360.41	360.41	360.41
9,000 - 10,000 lb Extendable	45.051	0.00	0.00	0.00	0.00	0.00	0.00	360.41	360.41	360.41	360.41	540.61	540.61
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.44
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.44
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.44
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.472	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	113.89
Fusion Machine >36" Ips	59.106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	236.42
Total		9108.56	10190.89	11452.69	11670.31	11078.29	10190.26	11108.40	11255.57	######	15535.90	15813.13	18613.65

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A5 - Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 1 by Peak Day in the Month											
Fuel (gal/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	1.427	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.427	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	97.02	97.02	97.02	102.73
Cat 14 Grader	4.579	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.609	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.87	25.74	25.74	25.74
20 TO 25 MT (CAT 320,321)	2.886	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.09	34.63	34.63	69.27
30 TO 35 MT (CAT 328,329)	4.324	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.29
40 - 48" Single Drum / Smooth / Vibro	1.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.74
78 - 84" Single Drum / Combo / Vibro	1.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.31	4.31	8.62	25.87
Plate Compactor	0.197	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	1.57	1.57	1.57
Rough Terrain Crane 70-79 Ton	3.289	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	3.289	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.16	13.16	13.16	13.16
Rough Terrain Crane 90-99 Ton	3.289	0.00	0.00	0.00	0.00	0.00	0.00	26.31	26.31	26.31	26.31	26.31	26.31
Rough Terrain Crane 90-99 Ton	3.289	78.93	78.93	39.47	39.47	39.47	0.00	0.00	0.00	13.16	13.16	13.16	13.16
Rough Terrain Crane 100-110 Ton	3.289	13.16	26.31	39.47	26.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	2.184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane >15 Ton	2.184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	3.289	0.00	0.00	26.31	26.31	26.31	26.31	26.31	26.31	26.31	26.31	26.31	26.31
Crane Hyd/C 265 Ton	5.485	0.00	0.00	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88
175-225 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.94
175-225 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.572	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	27.96	27.96	27.96	27.96	27.96	27.96	41.94	41.94	41.94	41.94	41.94	41.94
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.99	6.99	6.99
375 CFM Air Compressor - Diesel	0.874	34.95	69.89	69.89	69.89	69.89	69.89	34.95	34.95	34.95	34.95	34.95	34.95
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	18.78	18.78	31.30	31.30	31.30	31.30	25.04	25.04	25.04	28.17	28.17	28.17
1 - 24 KW Generator	0.892	14.26	14.26	14.26	14.26	14.26	14.26	28.53	28.53	28.53	28.53	28.53	28.53
Portable Light Plant - Moon Glo's	0.706	56.48	56.48	56.48	56.48	56.48	56.48	56.48	56.48	56.48	56.48	56.48	67.77
Road Broom	1.715	20.58	20.58	20.58	20.58	20.58	20.58	20.58	20.58	27.44	27.44	27.44	27.44
Road Broom	1.715	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.802	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.21	11.21	11.21	22.41
Cat 966, JA744, WA500, L150 Loader	3.853	15.41	15.41	15.41	15.41	15.41	15.41	15.41	15.41	15.41	46.24	46.24	46.24
Skid Steer-Wheeled	1.427	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	1.427	0.00	0.00	0.00	22.83	22.83	22.83	22.83	22.83	22.83	34.24	34.24	22.83
Rough Terrain Scissor Lift	0.818	32.70	32.70	32.70	32.70	32.70	32.70	32.70	39.24	39.24	39.24	39.24	13.08
40' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	3.27	3.27	3.27	6.54	6.54	6.54
40' Manlift	0.818	26.16	26.16	26.16	26.16	26.16	26.16	26.16	26.16	26.16	26.16	26.16	26.16
60' Manlift	0.818	6.54	6.54	6.54	6.54	6.54	6.54	6.54	6.54	6.54	6.54	6.54	6.54
80' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	2.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	2.592	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.37	10.37	10.37
30,000 lb and Greater Straight Mast	2.592	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	1.380	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	2.002	0.00	0.00	0.00	0.00	0.00	0.00	8.01	8.01	8.01	16.02	16.02	16.02
9,000 - 10,000 lb Extendable	2.002	0.00	0.00	0.00	0.00	0.00	0.00	16.02	16.02	16.02	16.02	24.03	24.03
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.93
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.93
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.93
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.265	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.06
Fusion Machine >36" Ips	2.627	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.51
Total		437.23	485.33	541.73	551.40	525.09	485.62	526.27	532.81	624.74	723.17	735.49	866.34

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment A
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

		Year 2 by Peak Day in the Month											
Equipment (Pieces per Day)	**Hours (hr/day)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	4	0	0	0	0	0	0	0	0	2	2	1	1
Small Loader/Backhoe (Cat 416-Cat 436)	5	7	7	6	5	5	5	5	5	2	2	2	2
Cat 14 Grader	4	0	0	0	0	0	0	0	0	1	1	1	1
10-19 MT (SM EX 312 - 318)	4	6	6	5	4	2	2	2	2	1	1	0	0
20 TO 25 MT (CAT 320,321)	4	9	9	8	5	3	3	3	3	2	2	0	0
30 TO 35 MT (CAT 328,329)	4	2	2	2	2	1	0	0	0	0	0	0	0
40 - 48" Single Drum / Smooth / Vibro	8	4	4	4	4	2	2	2	2	1	1	1	1
78 - 84" Single Drum / Combo / Vibro	8	0	0	0	0	0	0	0	0	1	1	1	1
Walk Behind Roller (2-Drum) (RAMMEX)	8	8	8	8	5	5	3	2	2	2	2	1	1
Plate Compactor	8	1	1	1	1	0	1	4	4	4	4	4	1
Rough Terrain Crane 70-79 Ton	5	0	0	0	1	1	1	1	1	1	1	1	3
Rough Terrain Crane 80-89 Ton	5	1	1	1	1	1	2	2	3	3	3	3	3
Rough Terrain Crane 90-99 Ton	5	2	2	2	2	2	2	2	2	2	2	4	4
Rough Terrain Crane 90-99 Ton	5	1	1	1	1	1	2	2	3	3	3	3	3
Rough Terrain Crane 100-110 Ton	5	0	0	0	1	1	1	1	1	1	1	1	1
Carry Deck Crane <15 Ton	5	0	0	0	1	1	1	1	1	3	3	4	4
Carry Deck Crane >15 Ton	5	0	0	0	1	1	1	1	1	1	1	1	1
Crane Hyd/C 130-150 Ton	5	0	0	0	0	0	1	1	1	1	6	6	8
Crane Hyd/C 265 Ton	5	0	0	0	0	0	1	1	1	1	1	1	1
175-225 Ton Lattice Crawler Crane	5	1	1	1	1	1	1	1	1	1	1	1	1
175-225 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	1	1	1	1
175-225 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	0	0	0	0
230-250 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	1	1	1	1	1
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	1	1	1	1	1	1	1
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	1	1	1	1	1	1
300-330 Ton Lattice Crawler Crane	5	0	0	0	1	1	1	1	1	1	1	1	1
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	1	1	1	1
300-330 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	0	0	0	0
601- 800 Ton Lattice Crawler Crane	5	0	0	0	0	0	0	0	0	0	0	0	0
185 CFM Air Compressor - Diesel	10	2	2	2	4	4	4	4	4	8	8	8	8
250 - 300 CFM Air Compressor - Diesel	10	1	1	1	1	1	1	1	1	2	2	2	2
375 CFM Air Compressor - Diesel	10	0	0	0	0	0	0	0	0	0	0	2	2
1600 CFM Air Compressor - Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
300 - 350 Amp Diesel Welder	10	5	5	5	5	5	5	5	5	15	15	15	15
1 - 24 KW Generator	10	6	6	6	6	6	6	6	6	6	6	6	6
Portable Light Plant - Moon Glo's	10	12	17	17	17	17	17	12	12	12	12	12	12
Road Broom	5	1	1	1	1	1	1	1	1	1	1	0	0
Road Broom	5	0	0	0	0	0	0	0	0	0	0	1	1
Cat IT28, 928, 930, 938 Loader	5	4	4	4	4	1	1	1	1	1	1	0	0
Cat 966, JA744, WA500, L150 Loader	5	4	4	4	4	4	4	4	4	4	4	3	2
Skid Steer-Wheeled	5	0	0	0	0	0	0	0	0	0	0	2	2
Skid Steer - Track	5	4	5	5	7	7	7	7	5	3	3	2	2
Rough Terrain Scissor Lift	5	4	4	4	2	2	2	2	2	2	6	6	6
40' Manlift	5	2	2	2	2	2	2	2	2	2	2	2	2
40' Manlift	5	10	10	12	12	12	14	14	14	18	18	18	18
60' Manlift	5	0	0	2	4	4	6	6	6	8	8	8	12
80' Manlift	5	0	0	2	2	2	4	4	4	6	6	6	6
120' Manlift	5	0	0	0	0	0	0	1	1	2	2	2	2
135' Manlift	5	0	0	0	0	0	0	1	1	2	2	2	2
150' Manlift	5	0	0	0	0	0	0	1	1	1	1	1	1
Forklift	5	0	0	0	0	0	0	0	0	0	0	0	0
30,000 lb and Greater Straight Mast	5	1	1	1	1	1	1	1	1	1	1	1	1
30,000 lb and Greater Straight Mast	5	0	0	0	0	0	0	1	1	1	1	1	1
6,000 - 8,000 lb Extendable	5	0	0	0	0	0	1	2	2	2	2	2	2
9,000 - 10,000 lb Extendable	5	2	2	2	2	2	2	2	2	2	2	2	2
9,000 - 10,000 lb Extendable	5	4	4	4	6	6	6	6	6	6	6	6	6
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	5	3	3	3	3	2	2	0	0	0	0	0	0
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	5	3	3	3	3	2	2	0	0	0	0	0	0
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	5	3	3	3	3	2	2	0	0	0	0	0	0
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	5	2	2	2	2	1	1	0	0	0	0	0	0
Fusion Machine >36" Ips	5	1	1	1	1	1	1	0	0	0	0	0	0

Number of pieces of equipment operating in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
VOC (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.05	0.05
Small Loader/Backhoe (Cat 416-Cat 436)	0.013	0.46	0.46	0.39	0.33	0.33	0.33	0.33	0.33	0.13	0.13	0.13	0.13
Cat 14 Grader	0.060	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.24
10-19 MT (SM EX 312 - 318)	0.017	0.41	0.41	0.34	0.27	0.14	0.14	0.14	0.14	0.07	0.07	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.024	0.85	0.85	0.76	0.47	0.28	0.28	0.28	0.28	0.19	0.19	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.028	0.22	0.22	0.22	0.22	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.023	0.74	0.74	0.74	0.74	0.37	0.37	0.37	0.37	0.19	0.19	0.19	0.19
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19	0.19
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	5.19	5.19	5.19	3.25	3.25	1.95	1.30	1.30	1.30	1.30	0.65	0.65
Plate Compactor	0.004	0.03	0.03	0.03	0.03	0.00	0.03	0.13	0.13	0.13	0.13	0.13	0.03
Rough Terrain Crane 70-79 Ton	0.046	0.00	0.00	0.00	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.69
Rough Terrain Crane 80-89 Ton	0.046	0.23	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69	0.69	0.69
Rough Terrain Crane 90-99 Ton	0.046	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.92	0.92
Rough Terrain Crane 90-99 Ton	0.046	0.23	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69	0.69	0.69
Rough Terrain Crane 100-110 Ton	0.046	0.00	0.00	0.00	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Carry Deck Crane <15 Ton	0.042	0.00	0.00	0.00	0.21	0.21	0.21	0.21	0.21	0.64	0.64	0.85	0.85
Carry Deck Crane >15 Ton	0.042	0.00	0.00	0.00	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Crane Hyd/C 130-150 Ton	0.046	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.23	0.23	1.38	1.38	1.84
Crane Hyd/C 265 Ton	0.055	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28	0.28	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28	0.28	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.12	0.12	0.12	0.24	0.24	0.24	0.24	0.24	0.49	0.49	0.49	0.49
250 - 300 CFM Air Compressor - Diesel	0.006	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.12	0.12	0.12	0.12
375 CFM Air Compressor - Diesel	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12
1600 CFM Air Compressor - Diesel	0.037	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	1.37	1.37	1.37	1.37
1 - 24 KW Generator	0.017	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Portable Light Plant - Moon Glo's	0.070	8.38	11.87	11.87	11.87	11.87	11.87	8.38	8.38	8.38	8.38	8.38	8.38
Road Broom	0.023	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00	0.00
Road Broom	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12
Cat IT28, 928, 930, 938 Loader	0.035	0.71	0.71	0.71	0.71	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.037	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.56	0.37
Skid Steer-Wheeled	0.013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13
Skid Steer - Track	0.013	0.26	0.33	0.33	0.46	0.46	0.46	0.46	0.33	0.20	0.20	0.13	0.13
Rough Terrain Scissor Lift	0.005	0.10	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.15	0.15	0.15
40' Manlift	0.005	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
40' Manlift	0.005	0.25	0.25	0.30	0.30	0.30	0.35	0.35	0.35	0.46	0.46	0.46	0.46
60' Manlift	0.005	0.00	0.00	0.05	0.10	0.10	0.15	0.15	0.15	0.20	0.20	0.20	0.30
80' Manlift	0.005	0.00	0.00	0.05	0.05	0.05	0.10	0.10	0.10	0.15	0.15	0.15	0.15
120' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.05	0.05	0.05	0.05
135' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.05	0.05	0.05	0.05
150' Manlift	0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03
Forklift	0.011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.028	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
30,000 lb and Greater Straight Mast	0.028	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.14	0.14	0.14	0.14
6,000 - 8,000 lb Extendable	0.023	0.00	0.00	0.00	0.00	0.00	0.12	0.23	0.23	0.23	0.23	0.23	0.23
9,000 - 10,000 lb Extendable	0.011	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
9,000 - 10,000 lb Extendable	0.011	0.22	0.22	0.22	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	1.15	1.15	1.15	1.15	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	1.15	1.15	1.15	1.15	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	1.15	1.15	1.15	1.15	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.013	0.13	0.13	0.13	0.13	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.029	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Total		25.59	29.15	29.07	28.23	25.65	25.78	19.84	20.44	22.74	23.99	23.53	24.27

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
CO (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.68	0.84	0.84
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	7.34	7.34	6.29	5.24	5.24	5.24	5.24	5.24	2.10	2.10	2.10	2.10
Cat 14 Grader	0.254	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	1.02	1.02	1.02
10-19 MT (SM EX 312 - 318)	0.239	5.73	5.73	4.77	3.82	1.91	1.91	1.91	1.91	0.95	0.95	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.378	13.62	13.62	12.10	7.56	4.54	4.54	4.54	4.54	3.03	3.03	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.205	1.64	1.64	1.64	1.64	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.365	11.67	11.67	11.67	11.67	5.83	5.83	5.83	5.83	2.92	2.92	2.92	2.92
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92	2.92	2.92	2.92
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	14.31	14.31	14.31	8.95	8.95	5.37	3.58	3.58	3.58	3.58	1.79	1.79
Plate Compactor	0.026	0.21	0.21	0.21	0.21	0.00	0.21	0.84	0.84	0.84	0.84	0.84	0.21
Rough Terrain Crane 70-79 Ton	0.253	0.00	0.00	0.00	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	3.79
Rough Terrain Crane 80-89 Ton	0.253	1.26	1.26	1.26	1.26	1.26	2.53	2.53	3.79	3.79	3.79	3.79	3.79
Rough Terrain Crane 90-99 Ton	0.253	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	5.06	5.06
Rough Terrain Crane 90-99 Ton	0.253	1.26	1.26	1.26	1.26	1.26	2.53	2.53	3.79	3.79	3.79	3.79	3.79
Rough Terrain Crane 100-110 Ton	0.253	0.00	0.00	0.00	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Carry Deck Crane <15 Ton	0.323	0.00	0.00	0.00	1.61	1.61	1.61	1.61	1.61	4.84	4.84	6.45	6.45
Carry Deck Crane >15 Ton	0.323	0.00	0.00	0.00	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
Crane Hyd/C 130-150 Ton	0.253	0.00	0.00	0.00	0.00	0.00	1.26	1.26	1.26	1.26	7.58	7.58	10.11
Crane Hyd/C 265 Ton	0.443	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21	2.21	2.21	2.21
175-225 Ton Lattice Crawler Crane	0.443	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21	2.21	2.21	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21	2.21	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	2.21	2.21	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	2.33	2.33	2.33	4.65	4.65	4.65	4.65	4.65	9.31	9.31	9.31	9.31
250 - 300 CFM Air Compressor - Diesel	0.116	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	2.33	2.33	2.33	2.33
375 CFM Air Compressor - Diesel	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33	2.33
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	6.45	6.45	6.45	6.45
1 - 24 KW Generator	0.206	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37
Portable Light Plant - Moon Glo's	0.226	27.12	38.42	38.42	38.42	38.42	38.42	27.12	27.12	27.12	27.12	27.12	27.12
Road Broom	0.280	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	0.00	0.00
Road Broom	0.280	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	1.40
Cat IT28, 928, 930, 938 Loader	0.395	7.90	7.90	7.90	7.90	1.98	1.98	1.98	1.98	1.98	1.98	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.205	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	3.08	2.05
Skid Steer-Wheeled	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10	2.10
Skid Steer - Track	0.210	4.19	5.24	5.24	7.34	7.34	7.34	7.34	5.24	3.14	3.14	2.10	2.10
Rough Terrain Scissor Lift	0.097	1.95	1.95	1.95	0.97	0.97	0.97	0.97	0.97	0.97	2.92	2.92	2.92
40' Manlift	0.097	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
40' Manlift	0.097	4.87	4.87	5.85	5.85	5.85	6.82	6.82	6.82	8.77	8.77	8.77	8.77
60' Manlift	0.097	0.00	0.00	0.97	1.95	1.95	2.92	2.92	2.92	3.90	3.90	3.90	5.85
80' Manlift	0.097	0.00	0.00	0.97	0.97	0.97	1.95	1.95	1.95	2.92	2.92	2.92	2.92
120' Manlift	0.097	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.97	0.97	0.97	0.97
135' Manlift	0.097	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.97	0.97	0.97	0.97
150' Manlift	0.097	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.49	0.49	0.49	0.49
Forklift	0.274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
30,000 lb and Greater Straight Mast	0.334	0.00	0.00	0.00	0.00	0.00	0.00	1.67	1.67	1.67	1.67	1.67	1.67
6,000 - 8,000 lb Extendable	0.348	0.00	0.00	0.00	0.00	0.00	1.74	3.48	3.48	3.48	3.48	3.48	3.48
9,000 - 10,000 lb Extendable	0.274	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74
9,000 - 10,000 lb Extendable	0.274	5.49	5.49	5.49	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	3.15	3.15	3.15	3.15	2.10	2.10	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	3.15	3.15	3.15	3.15	2.10	2.10	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	3.15	3.15	3.15	3.15	2.10	2.10	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	1.92	1.92	1.92	1.92	0.96	0.96	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.365	1.83	1.83	1.83	1.83	1.83	1.83	0.00	0.00	0.00	0.00	0.00	0.00
Total		155.41	167.75	167.16	170.39	148.55	157.24	142.78	145.43	163.06	171.33	169.23	174.58

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
NOX (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.26	0.26
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	2.31	2.31	1.98	1.65	1.65	1.65	1.65	1.65	0.66	0.66	0.66	0.66
Cat 14 Grader	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.79
10-19 MT (SM EX 312 - 318)	0.066	1.59	1.59	1.32	1.06	0.53	0.53	0.53	0.53	0.26	0.26	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.116	4.17	4.17	3.70	2.31	1.39	1.39	1.39	1.39	0.93	0.93	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.198	1.59	1.59	1.59	1.59	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	1.59	1.59	1.59	1.59	0.79	0.79	0.79	0.79	0.40	0.40	0.40	0.40
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.40
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	10.07	10.07	10.07	6.30	6.30	3.78	2.52	2.52	2.52	2.52	1.26	1.26
Plate Compactor	0.031	0.25	0.25	0.25	0.25	0.00	0.25	1.01	1.01	1.01	1.01	1.01	0.25
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.00	0.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	2.98
Rough Terrain Crane 80-89 Ton	0.198	0.99	0.99	0.99	0.99	0.99	1.98	1.98	2.98	2.98	2.98	2.98	2.98
Rough Terrain Crane 90-99 Ton	0.198	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	3.97	3.97
Rough Terrain Crane 90-99 Ton	0.198	0.99	0.99	0.99	0.99	0.99	1.98	1.98	2.98	2.98	2.98	2.98	2.98
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.00	0.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Carry Deck Crane <15 Ton	0.116	0.00	0.00	0.00	0.58	0.58	0.58	0.58	0.58	1.74	1.74	2.31	2.31
Carry Deck Crane >15 Ton	0.116	0.00	0.00	0.00	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Crane Hyd/C 130-150 Ton	0.198	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.99	5.95	5.95	7.94
Crane Hyd/C 265 Ton	0.397	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98
175-225 Ton Lattice Crawler Crane	0.397	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98	1.98	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.98	1.98	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	1.83	1.83	1.83	3.66	3.66	3.66	3.66	3.66	7.32	7.32	7.32	7.32
250 - 300 CFM Air Compressor - Diesel	0.092	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.83	1.83	1.83	1.83
375 CFM Air Compressor - Diesel	0.092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83	1.83
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	10.09	10.09	10.09	10.09
1 - 24 KW Generator	0.126	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58
Portable Light Plant - Moon Glo's	0.054	6.45	9.14	9.14	9.14	9.14	9.14	6.45	6.45	6.45	6.45	6.45	6.45
Road Broom	0.050	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00
Road Broom	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25
Cat IT28, 928, 930, 938 Loader	0.116	2.31	2.31	2.31	2.31	0.58	0.58	0.58	0.58	0.58	0.58	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.198	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	2.98	1.98
Skid Steer-Wheeled	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66
Skid Steer - Track	0.066	1.32	1.65	1.65	2.31	2.31	2.31	2.31	1.65	0.99	0.99	0.66	0.66
Rough Terrain Scissor Lift	0.091	1.82	1.82	1.82	0.91	0.91	0.91	0.91	0.91	0.91	2.73	2.73	2.73
40' Manlift	0.091	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
40' Manlift	0.091	4.55	4.55	5.46	5.46	5.46	6.37	6.37	6.37	8.19	8.19	8.19	8.19
60' Manlift	0.091	0.00	0.00	0.91	1.82	1.82	2.73	2.73	2.73	3.64	3.64	3.64	5.46
80' Manlift	0.091	0.00	0.00	0.91	0.91	0.91	1.82	1.82	1.82	2.73	2.73	2.73	2.73
120' Manlift	0.091	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.91	0.91	0.91	0.91
135' Manlift	0.091	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.91	0.91	0.91	0.91
150' Manlift	0.091	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.46	0.46	0.46	0.46
Forklift	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
30,000 lb and Greater Straight Mast	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58	0.58	0.58	0.58	0.58
6,000 - 8,000 lb Extendable	0.050	0.00	0.00	0.00	0.00	0.00	0.25	0.50	0.50	0.50	0.50	0.50	0.50
9,000 - 10,000 lb Extendable	0.066	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
9,000 - 10,000 lb Extendable	0.066	1.32	1.32	1.32	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	2.17	2.17	2.17	2.17	1.45	1.45	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	2.17	2.17	2.17	2.17	1.45	1.45	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	2.17	2.17	2.17	2.17	1.45	1.45	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.50	0.50	0.50	0.50	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.116	0.58	0.58	0.58	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00
Total		72.95	75.97	77.64	80.16	72.71	79.58	75.39	78.70	98.62	105.40	105.84	109.89

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
SOx (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plate Compactor	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Carry Deck Crane >15 Ton	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.03
Crane Hyd/C 265 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
1 - 24 KW Generator	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Portable Light Plant - Moon Glo's	0.000	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer - Track	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
40' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
60' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
80' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
120' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.20	0.21	0.21	0.23	0.20	0.22	0.22	0.23	0.27	0.29	0.29	0.30

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
PM10 (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.01	0.01
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.12	0.12	0.10	0.08	0.08	0.08	0.08	0.08	0.03	0.03	0.03	0.03
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04
10-19 MT (SM EX 312 - 318)	0.003	0.08	0.08	0.07	0.05	0.03	0.03	0.03	0.03	0.01	0.01	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.21	0.21	0.19	0.12	0.07	0.07	0.07	0.07	0.05	0.05	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.07	0.07	0.07	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.08	0.08	0.08	0.08	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.08	0.08	0.08	0.05	0.05	0.03	0.02	0.02	0.02	0.02	0.01	0.01
Plate Compactor	0.001	0.01	0.01	0.01	0.01	0.00	0.01	0.04	0.04	0.04	0.04	0.04	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.15
Rough Terrain Crane 80-89 Ton	0.010	0.05	0.05	0.05	0.05	0.05	0.10	0.10	0.15	0.15	0.15	0.15	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20
Rough Terrain Crane 90-99 Ton	0.010	0.05	0.05	0.05	0.05	0.05	0.10	0.10	0.15	0.15	0.15	0.15	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.09	0.09	0.12	0.12
Carry Deck Crane >15 Ton	0.006	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.30	0.30	0.40
Crane Hyd/C 265 Ton	0.020	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.03	0.03	0.03	0.06	0.06	0.06	0.06	0.06	0.11	0.11	0.11	0.11
250 - 300 CFM Air Compressor - Diesel	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03
375 CFM Air Compressor - Diesel	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.18	0.18	0.18	0.18
1 - 24 KW Generator	0.002	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Portable Light Plant - Moon Glo's	0.001	0.15	0.21	0.21	0.21	0.21	0.21	0.15	0.15	0.15	0.15	0.15	0.15
Road Broom	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Cat IT28, 928, 930, 938 Loader	0.006	0.12	0.12	0.12	0.12	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.10
Skid Steer-Wheeled	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
Skid Steer - Track	0.003	0.07	0.08	0.08	0.12	0.12	0.12	0.12	0.08	0.05	0.05	0.03	0.03
Rough Terrain Scissor Lift	0.001	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
40' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
40' Manlift	0.001	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.07
60' Manlift	0.001	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.05
80' Manlift	0.001	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
120' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
135' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02
9,000 - 10,000 lb Extendable	0.003	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9,000 - 10,000 lb Extendable	0.003	0.07	0.07	0.07	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.006	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Total		2.02	2.09	2.06	2.29	2.01	2.35	2.39	2.55	2.98	3.25	3.26	3.39

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
PM2.5 (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.01	0.01
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.12	0.12	0.10	0.08	0.08	0.08	0.08	0.08	0.03	0.03	0.03	0.03
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04
10-19 MT (SM EX 312 - 318)	0.003	0.08	0.08	0.07	0.05	0.03	0.03	0.03	0.03	0.01	0.01	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.21	0.21	0.19	0.12	0.07	0.07	0.07	0.07	0.05	0.05	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.06	0.06	0.06	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.08	0.08	0.08	0.08	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.08	0.08	0.08	0.05	0.05	0.03	0.02	0.02	0.02	0.02	0.01	0.01
Plate Compactor	0.001	0.01	0.01	0.01	0.01	0.00	0.01	0.04	0.04	0.04	0.04	0.04	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.15
Rough Terrain Crane 80-89 Ton	0.010	0.05	0.05	0.05	0.05	0.05	0.10	0.10	0.15	0.15	0.15	0.15	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20
Rough Terrain Crane 90-99 Ton	0.010	0.05	0.05	0.05	0.05	0.05	0.10	0.10	0.15	0.15	0.15	0.15	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.09	0.09	0.12	0.12
Carry Deck Crane >15 Ton	0.006	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.30	0.30	0.40
Crane Hyd/C 265 Ton	0.020	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.10	0.10	0.10	0.10
250 - 300 CFM Air Compressor - Diesel	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03
375 CFM Air Compressor - Diesel	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.18	0.18	0.18	0.18
1 - 24 KW Generator	0.002	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Portable Light Plant - Moon Glo's	0.001	0.15	0.21	0.21	0.21	0.21	0.21	0.15	0.15	0.15	0.15	0.15	0.15
Road Broom	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Cat IT28, 928, 930, 938 Loader	0.006	0.12	0.12	0.12	0.12	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.10
Skid Steer-Wheeled	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
Skid Steer - Track	0.003	0.07	0.08	0.08	0.12	0.12	0.12	0.12	0.08	0.05	0.05	0.03	0.03
Rough Terrain Scissor Lift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
40' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
40' Manlift	0.001	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.06
60' Manlift	0.001	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.04
80' Manlift	0.001	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
120' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
135' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02
9,000 - 10,000 lb Extendable	0.003	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9,000 - 10,000 lb Extendable	0.003	0.07	0.07	0.07	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.006	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Total		2.00	2.08	2.05	2.27	2.00	2.34	2.37	2.53	2.96	3.22	3.23	3.36

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 by Peak Day in the Month											
CO2 (lb/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	32.123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	256.98	256.98	128.49	128.49
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	1124.30	1124.30	963.69	803.07	803.07	803.07	803.07	803.07	321.23	321.23	321.23	321.23
Cat 14 Grader	102.992	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	411.97	411.97	411.97	411.97
10-19 MT (SM EX 312 - 318)	35.999	863.97	863.97	719.97	575.98	287.99	287.99	287.99	287.99	143.99	143.99	0.00	0.00
20 TO 25 MT (CAT 320,321)	64.917	2337.02	2337.02	2077.35	1298.34	779.01	779.01	779.01	779.01	519.34	519.34	0.00	0.00
30 TO 35 MT (CAT 328,329)	97.247	777.98	777.98	777.98	777.98	388.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.474	975.17	975.17	975.17	975.17	487.58	487.58	487.58	487.58	243.79	243.79	243.79	243.79
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	243.79	243.79	243.79	243.79
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	776.20	776.20	776.20	485.12	485.12	291.07	194.05	194.05	194.05	194.05	97.02	97.02
Plate Compactor	4.310	34.48	34.48	34.48	34.48	0.00	34.48	137.92	137.92	137.92	137.92	137.92	34.48
Rough Terrain Crane 70-79 Ton	73.881	0.00	0.00	0.00	369.41	369.41	369.41	369.41	369.41	369.41	369.41	369.41	1108.22
Rough Terrain Crane 80-89 Ton	73.881	369.41	369.41	369.41	369.41	369.41	738.81	738.81	1108.22	######	1108.22	1108.22	1108.22
Rough Terrain Crane 90-99 Ton	73.881	738.81	738.81	738.81	738.81	738.81	738.81	738.81	738.81	738.81	738.81	1477.62	1477.62
Rough Terrain Crane 90-99 Ton	73.881	369.41	369.41	369.41	369.41	369.41	738.81	738.81	1108.22	######	1108.22	1108.22	1108.22
Rough Terrain Crane 100-110 Ton	73.881	0.00	0.00	0.00	369.41	369.41	369.41	369.41	369.41	369.41	369.41	369.41	369.41
Carry Deck Crane <15 Ton	49.104	0.00	0.00	0.00	245.52	245.52	245.52	245.52	245.52	736.56	736.56	982.08	982.08
Carry Deck Crane >15 Ton	49.104	0.00	0.00	0.00	245.52	245.52	245.52	245.52	245.52	245.52	245.52	245.52	245.52
Crane Hyd/C 130-150 Ton	73.881	0.00	0.00	0.00	0.00	0.00	369.41	369.41	369.41	369.41	2216.44	2216.44	2955.25
Crane Hyd/C 265 Ton	122.974	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87	614.87	614.87	614.87
175-225 Ton Lattice Crawler Crane	122.974	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87	614.87	614.87	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87	614.87	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	614.87	614.87	614.87	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	393.16	393.16	393.16	786.32	786.32	786.32	786.32	786.32	######	1572.64	1572.64	1572.64
250 - 300 CFM Air Compressor - Diesel	19.658	196.58	196.58	196.58	196.58	196.58	196.58	196.58	196.58	393.16	393.16	393.16	393.16
375 CFM Air Compressor - Diesel	19.658	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	393.16	393.16
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	428.88	428.88	428.88	428.88	428.88	428.88	428.88	428.88	######	1286.65	1286.65	1286.65
1 - 24 KW Generator	20.059	1203.55	1203.55	1203.55	1203.55	1203.55	1203.55	1203.55	1203.55	######	1203.55	1203.55	1203.55
Portable Light Plant - Moon Glo's	6.906	828.66	1173.94	1173.94	1173.94	1173.94	1173.94	828.66	828.66	828.66	828.66	828.66	828.66
Road Broom	38.704	193.52	193.52	193.52	193.52	193.52	193.52	193.52	193.52	193.52	193.52	0.00	0.00
Road Broom	38.704	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	193.52	193.52
Cat IT28, 928, 930, 938 Loader	63.020	1260.40	1260.40	1260.40	1260.40	315.10	315.10	315.10	315.10	315.10	315.10	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	87.614	1752.27	1752.27	1752.27	1752.27	1752.27	1752.27	1752.27	1752.27	######	1752.27	1314.21	876.14
Skid Steer-Wheeled	32.123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	321.23	321.23
Skid Steer - Track	32.123	642.46	803.07	803.07	1124.30	1124.30	1124.30	1124.30	803.07	481.84	481.84	321.23	321.23
Rough Terrain Scissor Lift	18.396	367.92	367.92	367.92	183.96	183.96	183.96	183.96	183.96	183.96	551.88	551.88	551.88
40' Manlift	18.396	183.96	183.96	183.96	183.96	183.96	183.96	183.96	183.96	183.96	183.96	183.96	183.96
40' Manlift	18.396	919.80	919.80	1103.77	1103.77	1103.77	1287.73	1287.73	1287.73	######	1655.65	1655.65	1655.65
60' Manlift	18.396	0.00	0.00	183.96	367.92	367.92	551.88	551.88	551.88	735.84	735.84	735.84	1103.77
80' Manlift	18.396	0.00	0.00	183.96	183.96	183.96	367.92	367.92	367.92	551.88	551.88	551.88	551.88
120' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	91.98	91.98	183.96	183.96	183.96	183.96
135' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	91.98	91.98	183.96	183.96	183.96	183.96
150' Manlift	18.396	0.00	0.00	0.00	0.00	0.00	0.00	91.98	91.98	91.98	91.98	91.98	91.98
Forklift	45.074	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	293.21	293.21	293.21	293.21	293.21	293.21	293.21	293.21	293.21	293.21	293.21	293.21
30,000 lb and Greater Straight Mast	58.643	0.00	0.00	0.00	0.00	0.00	0.00	293.21	293.21	293.21	293.21	293.21	293.21
6,000 - 8,000 lb Extendable	31.041	0.00	0.00	0.00	0.00	0.00	155.21	310.41	310.41	310.41	310.41	310.41	310.41
9,000 - 10,000 lb Extendable	45.074	450.74	450.74	450.74	450.74	450.74	450.74	450.74	450.74	450.74	450.74	450.74	450.74
9,000 - 10,000 lb Extendable	45.074	901.48	901.48	901.48	1352.22	1352.22	1352.22	1352.22	1352.22	######	1352.22	1352.22	1352.22
Fusion Mach 2"lps-8"Dips (Tracstar 28)	11.055	165.83	165.83	165.83	165.83	110.55	110.55	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"lps-12"Dips (Tracstar 412)	11.055	165.83	165.83	165.83	165.83	110.55	110.55	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"lps-18"Dips (Tracstar 618)	11.055	165.83	165.83	165.83	165.83	110.55	110.55	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"lps-36"Dips(Tracstar 900)	28.423	284.23	284.23	284.23	284.23	142.11	142.11	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" lps	59.106	295.53	295.53	295.53	295.53	295.53	295.53	0.00	0.00	0.00	0.00	0.00	0.00
Total		20075.45	20581.34	20568.94	22204.10	19232.48	21728.97	21960.04	22992.49	######	29150.90	29046.99	30351.03

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A6 - Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 2 by Peak Day in the Month											
Fuel (gal/day)	**2022**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	1.428	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.42	11.42	5.71	5.71
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	49.97	49.97	42.83	35.69	35.69	35.69	35.69	35.69	14.28	14.28	14.28	14.28
Cat 14 Grader	4.577	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.31	18.31	18.31	18.31
10-19 MT (SM EX 312 - 318)	1.600	38.40	38.40	32.00	25.60	12.80	12.80	12.80	12.80	6.40	6.40	0.00	0.00
20 TO 25 MT (CAT 320,321)	2.885	103.87	103.87	92.33	57.70	34.62	34.62	34.62	34.62	23.08	23.08	0.00	0.00
30 TO 35 MT (CAT 328,329)	4.322	34.58	34.58	34.58	34.58	17.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.354	43.34	43.34	43.34	43.34	21.67	21.67	21.67	21.67	10.84	10.84	10.84	10.84
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.84	10.84	10.84	10.84
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	34.50	34.50	34.50	21.56	21.56	12.94	8.62	8.62	8.62	8.62	4.31	4.31
Plate Compactor	0.197	1.57	1.57	1.57	1.57	0.00	1.57	6.30	6.30	6.30	6.30	6.30	1.57
Rough Terrain Crane 70-79 Ton	3.284	0.00	0.00	0.00	16.42	16.42	16.42	16.42	16.42	16.42	16.42	16.42	49.25
Rough Terrain Crane 80-89 Ton	3.284	16.42	16.42	16.42	16.42	16.42	32.84	32.84	49.25	49.25	49.25	49.25	49.25
Rough Terrain Crane 90-99 Ton	3.284	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	65.67	65.67
Rough Terrain Crane 90-99 Ton	3.284	16.42	16.42	16.42	16.42	16.42	32.84	32.84	49.25	49.25	49.25	49.25	49.25
Rough Terrain Crane 100-110 Ton	3.284	0.00	0.00	0.00	16.42	16.42	16.42	16.42	16.42	16.42	16.42	16.42	16.42
Carry Deck Crane <15 Ton	2.182	0.00	0.00	0.00	10.91	10.91	10.91	10.91	10.91	32.74	32.74	43.65	43.65
Carry Deck Crane >15 Ton	2.182	0.00	0.00	0.00	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91
Crane Hyd/C 130-150 Ton	3.284	0.00	0.00	0.00	0.00	0.00	16.42	16.42	16.42	16.42	98.51	98.51	131.34
Crane Hyd/C 265 Ton	5.465	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33	27.33	27.33	27.33
175-225 Ton Lattice Crawler Crane	5.465	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33	27.33	27.33	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33	27.33	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.33	27.33	27.33	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	17.47	17.47	17.47	34.95	34.95	34.95	34.95	34.95	69.89	69.89	69.89	69.89
250 - 300 CFM Air Compressor - Diesel	0.874	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	17.47	17.47	17.47	17.47
375 CFM Air Compressor - Diesel	0.874	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.47	17.47
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	58.69	58.69	58.69	58.69
1 - 24 KW Generator	0.892	53.49	53.49	53.49	53.49	53.49	53.49	53.49	53.49	53.49	53.49	53.49	53.49
Portable Light Plant - Moon Glo's	0.705	84.61	119.86	119.86	119.86	119.86	119.86	84.61	84.61	84.61	84.61	84.61	84.61
Road Broom	1.720	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	0.00	0.00
Road Broom	1.720	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.60	8.60
Cat IT28, 928, 930, 938 Loader	2.801	56.02	56.02	56.02	56.02	14.00	14.00	14.00	14.00	14.00	14.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	3.894	77.88	77.88	77.88	77.88	77.88	77.88	77.88	77.88	77.88	77.88	58.41	38.94
Skid Steer-Wheeled	1.428	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.28	14.28
Skid Steer - Track	1.428	28.55	35.69	35.69	49.97	49.97	49.97	49.97	35.69	21.41	21.41	14.28	14.28
Rough Terrain Scissor Lift	0.818	16.35	16.35	16.35	8.18	8.18	8.18	8.18	8.18	8.18	24.53	24.53	24.53
40' Manlift	0.818	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18
40' Manlift	0.818	40.88	40.88	49.06	49.06	49.06	57.23	57.23	57.23	73.58	73.58	73.58	73.58
60' Manlift	0.818	0.00	0.00	8.18	16.35	16.35	24.53	24.53	24.53	32.70	32.70	32.70	49.06
80' Manlift	0.818	0.00	0.00	8.18	8.18	8.18	16.35	16.35	16.35	24.53	24.53	24.53	24.53
120' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	4.09	4.09	8.18	8.18	8.18	8.18
135' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	4.09	4.09	8.18	8.18	8.18	8.18
150' Manlift	0.818	0.00	0.00	0.00	0.00	0.00	0.00	4.09	4.09	4.09	4.09	4.09	4.09
Forklift	2.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03
30,000 lb and Greater Straight Mast	2.606	0.00	0.00	0.00	0.00	0.00	0.00	13.03	13.03	13.03	13.03	13.03	13.03
6,000 - 8,000 lb Extendable	1.380	0.00	0.00	0.00	0.00	0.00	6.90	13.80	13.80	13.80	13.80	13.80	13.80
9,000 - 10,000 lb Extendable	2.003	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03
9,000 - 10,000 lb Extendable	2.003	40.07	40.07	40.07	60.10	60.10	60.10	60.10	60.10	60.10	60.10	60.10	60.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	7.37	7.37	7.37	7.37	4.91	4.91	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	7.37	7.37	7.37	7.37	4.91	4.91	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	7.37	7.37	7.37	7.37	4.91	4.91	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	12.63	12.63	12.63	12.63	6.32	6.32	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	2.627	13.13	13.13	13.13	13.13	13.13	13.13	0.00	0.00	0.00	0.00	0.00	0.00
Total		940.55	982.94	982.39	1055.07	922.96	1033.95	1024.43	1070.32	######	1345.03	1340.41	1398.24

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment A
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

		Year 3 by Peak Day in the Month											
Equipment (Pieces per Day)	**Hours (hr/day)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	4	0	0	0	0	0	0	0	0	0	0	0	0
Small Loader/Backhoe (Cat 416-Cat 436)	4	1	1	1	1	1	1	1	0	0	0	0	0
Cat 14 Grader	4	0	0	0	0	0	0	0	0	0	0	0	0
10-19 MT (SM EX 312 - 318)	4	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 25 MT (CAT 320,321)	4	0	0	0	0	0	0	0	0	0	0	0	0
30 TO 35 MT (CAT 328,329)	4	0	0	0	0	0	0	0	0	0	0	0	0
40 - 48" Single Drum / Smooth / Vibro	8	0	0	0	0	0	0	0	0	0	0	0	0
78 - 84" Single Drum / Combo / Vibro	8	0	0	0	0	0	0	0	0	0	0	0	0
Walk Behind Roller (2-Drum) (RAMMEX)	8	0	8	8	8	8	8	8	8	8	8	8	0
Plate Compactor	8	0	0	0	0	0	0	0	0	0	0	0	0
Rough Terrain Crane 70-79 Ton	4	3	3	3	3	3	3	3	3	1	1	1	0
Rough Terrain Crane 80-89 Ton	4	3	3	3	3	3	3	3	3	3	3	3	0
Rough Terrain Crane 90-99 Ton	4	4	4	4	4	4	4	4	2	2	2	2	0
Rough Terrain Crane 90-99 Ton	4	3	3	3	3	3	3	3	3	3	3	3	0
Rough Terrain Crane 100-110 Ton	4	2	10	10	10	10	10	10	10	2	2	2	0
Carry Deck Crane <15 Ton	4	4	6	6	6	6	6	6	4	4	4	4	0
Carry Deck Crane >15 Ton	4	1	1	1	1	1	1	1	1	1	1	1	0
Crane Hyd/C 130-150 Ton	4	8	8	8	8	8	8	8	8	6	1	1	0
Crane Hyd/C 265 Ton	4	1	1	1	1	1	1	1	1	1	1	1	0
175-225 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	1	1	1	1	0
175-225 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	0	0	0	0	0
175-225 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	1	1	1	1	0
230-250 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	1	1	1	0	0
300-330 Ton Lattice Crawler Crane	4	1	1	1	1	0	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	1	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	1	1	1	1	1	0	0	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	1	1	0	0	0	0	0
300-330 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	1	1	1	1	0
300-330 Ton Lattice Crawler Crane	4	1	1	1	1	1	1	1	1	1	1	1	0
300-330 Ton Lattice Crawler Crane	4	0	0	0	0	0	0	0	1	1	1	1	0
601- 800 Ton Lattice Crawler Crane	4	0	0	1	1	0	0	0	0	0	0	0	0
185 CFM Air Compressor - Diesel	8	8	8	8	8	8	8	8	8	4	4	4	0
250 - 300 CFM Air Compressor - Diesel	8	2	2	2	4	4	4	4	4	4	4	4	0
375 CFM Air Compressor - Diesel	8	2	2	2	4	4	6	6	6	6	8	8	0
1600 CFM Air Compressor - Diesel	8	0	0	0	0	0	0	0	0	0	2	2	0
300 - 350 Amp Diesel Welder	8	15	15	15	15	15	15	15	15	15	15	15	0
1 - 24 KW Generator	8	6	6	6	4	4	4	4	4	4	4	2	0
Portable Light Plant - Moon Glo's	8	12	17	17	17	17	17	12	12	12	4	4	0
Road Broom	4	0	0	0	0	0	0	0	0	0	0	0	0
Road Broom	4	1	1	1	1	1	1	1	1	1	1	1	0
Cat IT28, 928, 930, 938 Loader	4	0	0	0	0	0	0	0	0	0	0	0	0
Cat 966, JA744, WA500, L150 Loader	4	1	1	1	1	1	1	1	1	1	1	0	0
Skid Steer-Wheeled	4	4	4	4	4	4	4	4	4	4	4	2	0
Skid Steer - Track	4	0	0	0	0	0	0	0	0	0	0	0	0
Rough Terrain Scissor Lift	4	4	4	4	4	4	4	4	4	4	4	4	0
40' Manlift	4	2	2	2	2	2	2	1	1	1	1	1	0
40' Manlift	4	18	18	18	14	14	14	14	14	6	6	4	0
60' Manlift	4	12	14	14	14	14	14	14	14	14	14	8	0
80' Manlift	4	6	6	6	6	6	6	8	8	8	6	4	0
120' Manlift	4	2	2	2	2	1	1	0	0	0	0	0	0
135' Manlift	4	2	2	2	2	1	1	0	0	0	0	0	0
150' Manlift	4	1	1	1	1	1	1	0	0	0	0	0	0
Forklift	4	0	0	0	0	0	0	2	2	2	2	0	0
30,000 lb and Greater Straight Mast	4	1	1	1	1	1	1	1	1	1	1	1	0
30,000 lb and Greater Straight Mast	4	1	1	1	1	1	1	1	0	0	0	0	0
6,000 - 8,000 lb Extendable	4	2	2	2	2	2	2	2	2	2	2	2	0
9,000 - 10,000 lb Extendable	4	2	2	2	2	2	2	2	2	2	2	2	0
9,000 - 10,000 lb Extendable	4	6	6	6	6	6	6	6	6	6	6	4	0
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	4	0	0	0	0	0	0	0	0	0	0	0	0
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	4	0	0	0	0	0	0	0	0	0	0	0	0
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	4	0	0	0	0	0	0	0	0	0	0	0	0
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	4	0	0	0	0	0	0	0	0	0	0	0	0
Fusion Machine >36" Ips	4	0	0	0	0	0	0	0	0	0	0	0	0

Number of pieces of equipment operating in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
VOC (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.031	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.083	0.00	5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31	0.00
Plate Compactor	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.044	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.18	0.18	0.18	0.00
Rough Terrain Crane 80-89 Ton	0.044	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.00
Rough Terrain Crane 90-99 Ton	0.044	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.35	0.35	0.35	0.35	0.00
Rough Terrain Crane 90-99 Ton	0.044	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.00
Rough Terrain Crane 100-110 Ton	0.044	0.35	1.76	1.76	1.76	1.76	1.76	1.76	1.76	0.35	0.35	0.35	0.00
Carry Deck Crane <15 Ton	0.039	0.63	0.94	0.94	0.94	0.94	0.94	0.94	0.63	0.63	0.63	0.63	0.00
Carry Deck Crane >15 Ton	0.039	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.00
Crane Hyd/C 130-150 Ton	0.044	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.05	0.18	0.18	0.00
Crane Hyd/C 265 Ton	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
175-225 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
175-225 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.00
230-250 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
300-330 Ton Lattice Crawler Crane	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.00
601- 800 Ton Lattice Crawler Crane	0.154	0.00	0.00	0.62	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.20	0.20	0.20	0.00
250 - 300 CFM Air Compressor - Diesel	0.006	0.10	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
375 CFM Air Compressor - Diesel	0.006	0.10	0.10	0.10	0.20	0.20	0.29	0.29	0.29	0.29	0.39	0.39	0.00
1600 CFM Air Compressor - Diesel	0.035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.56	0.00
300 - 350 Amp Diesel Welder	0.009	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	0.00
1 - 24 KW Generator	0.017	0.83	0.83	0.83	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.00
Portable Light Plant - Moon Glo's	0.069	6.63	9.39	9.39	9.39	9.39	9.39	6.63	6.63	6.63	2.21	2.21	0.00
Road Broom	0.023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.023	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.00
Cat IT28, 928, 930, 938 Loader	0.032	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.035	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00
Skid Steer-Wheeled	0.031	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.25	0.00
Skid Steer - Track	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.005	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
40' Manlift	0.005	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.00
40' Manlift	0.005	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.12	0.12	0.08	0.00
60' Manlift	0.005	0.24	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.16	0.00
80' Manlift	0.005	0.12	0.12	0.12	0.12	0.12	0.12	0.16	0.16	0.16	0.12	0.08	0.00
120' Manlift	0.005	0.04	0.04	0.04	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.005	0.04	0.04	0.04	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.005	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.011	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.025	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
30,000 lb and Greater Straight Mast	0.025	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.023	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.00
9,000 - 10,000 lb Extendable	0.011	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.00
9,000 - 10,000 lb Extendable	0.011	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.17	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		18.28	28.11	28.73	28.57	27.71	27.81	25.09	24.20	21.53	16.85	15.61	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
CO (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.400	1.60	1.60	1.60	1.60	1.60	1.60	1.60	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.249	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.237	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.379	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.204	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.226	0.00	14.46	14.46	14.46	14.46	14.46	14.46	14.46	14.46	14.46	14.46	0.00
Plate Compactor	0.026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.252	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	1.01	1.01	1.01	0.00
Rough Terrain Crane 80-89 Ton	0.252	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	0.00
Rough Terrain Crane 90-99 Ton	0.252	4.04	4.04	4.04	4.04	4.04	4.04	4.04	2.02	2.02	2.02	2.02	0.00
Rough Terrain Crane 90-99 Ton	0.252	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	0.00
Rough Terrain Crane 100-110 Ton	0.252	2.02	10.09	10.09	10.09	10.09	10.09	10.09	10.09	2.02	2.02	2.02	0.00
Carry Deck Crane <15 Ton	0.319	5.11	7.67	7.67	7.67	7.67	7.67	7.67	5.11	5.11	5.11	5.11	0.00
Carry Deck Crane >15 Ton	0.319	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	0.00
Crane Hyd/C 130-150 Ton	0.252	8.07	8.07	8.07	8.07	8.07	8.07	8.07	8.07	6.05	1.01	1.01	0.00
Crane Hyd/C 265 Ton	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
175-225 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
175-225 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.59	1.59	1.59	0.00
230-250 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	1.59	1.59	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.59	1.59	1.59	0.00
601- 800 Ton Lattice Crawler Crane	1.164	0.00	0.00	4.66	4.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	3.72	3.72	3.72	0.00
250 - 300 CFM Air Compressor - Diesel	0.116	1.86	1.86	1.86	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	0.00
375 CFM Air Compressor - Diesel	0.116	1.86	1.86	1.86	3.72	3.72	5.58	5.58	5.58	5.58	7.45	7.45	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.90	5.90	0.00
300 - 350 Amp Diesel Welder	0.043	5.13	5.13	5.13	5.13	5.13	5.13	5.13	5.13	5.13	5.13	5.13	0.00
1 - 24 KW Generator	0.206	9.89	9.89	9.89	6.60	6.60	6.60	6.60	6.60	6.60	6.60	3.30	0.00
Portable Light Plant - Moon Glo's	0.226	21.69	30.73	30.73	30.73	30.73	30.73	21.69	21.69	21.69	7.23	7.23	0.00
Road Broom	0.307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.307	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	0.00
Cat IT28, 928, 930, 938 Loader	0.394	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.199	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.00	0.00
Skid Steer-Wheeled	0.400	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	3.20	0.00
Skid Steer - Track	0.400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.098	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	0.00
40' Manlift	0.098	0.78	0.78	0.78	0.78	0.78	0.78	0.39	0.39	0.39	0.39	0.39	0.00
40' Manlift	0.098	7.04	7.04	7.04	5.48	5.48	5.48	5.48	5.48	2.35	2.35	1.56	0.00
60' Manlift	0.098	4.69	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	3.13	0.00
80' Manlift	0.098	2.35	2.35	2.35	2.35	2.35	2.35	3.13	3.13	3.13	2.35	1.56	0.00
120' Manlift	0.098	0.78	0.78	0.78	0.78	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.098	0.78	0.78	0.78	0.78	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.098	0.39	0.39	0.39	0.39	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.275	0.00	0.00	0.00	0.00	0.00	0.00	2.20	2.20	2.20	2.20	0.00	0.00
30,000 lb and Greater Straight Mast	0.332	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	0.00
30,000 lb and Greater Straight Mast	0.332	1.33	1.33	1.33	1.33	1.33	1.33	1.33	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.349	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	0.00
9,000 - 10,000 lb Extendable	0.275	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	0.00
9,000 - 10,000 lb Extendable	0.275	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	4.39	0.00	
Fusion Mach 2"lps-8"Dips (Tracstar 28)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"lps-12"Dips (Tracstar 412)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"lps-18"Dips (Tracstar 618)	0.210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"lps-36"Dips(Tracstar 900)	0.194	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" lps	0.359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		134.43	169.34	174.00	172.86	165.83	167.69	160.07	152.57	132.02	119.49	102.30	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
NOX (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.158	0.00	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	0.00
Plate Compactor	0.031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.198	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	0.79	0.79	0.79	0.00
Rough Terrain Crane 80-89 Ton	0.198	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	0.00
Rough Terrain Crane 90-99 Ton	0.198	3.17	3.17	3.17	3.17	3.17	3.17	3.17	1.59	1.59	1.59	1.59	0.00
Rough Terrain Crane 90-99 Ton	0.198	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	0.00
Rough Terrain Crane 100-110 Ton	0.198	1.59	7.94	7.94	7.94	7.94	7.94	7.94	7.94	1.59	1.59	1.59	0.00
Carry Deck Crane <15 Ton	0.116	1.85	2.78	2.78	2.78	2.78	2.78	2.78	1.85	1.85	1.85	1.85	0.00
Carry Deck Crane >15 Ton	0.116	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.00
Crane Hyd/C 130-150 Ton	0.198	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	4.76	0.79	0.79	0.00
Crane Hyd/C 265 Ton	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
175-225 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
175-225 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.59	1.59	1.59	0.00
230-250 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	1.59	1.59	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
300-330 Ton Lattice Crawler Crane	0.397	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.59	1.59	1.59	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	2.93	2.93	2.93	0.00
250 - 300 CFM Air Compressor - Diesel	0.092	1.46	1.46	1.46	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	0.00
375 CFM Air Compressor - Diesel	0.092	1.46	1.46	1.46	2.93	2.93	4.39	4.39	4.39	4.39	5.86	5.86	0.00
1600 CFM Air Compressor - Diesel	0.227	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	3.63	0.00
300 - 350 Amp Diesel Welder	0.067	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	0.00
1 - 24 KW Generator	0.110	5.30	5.30	5.30	3.54	3.54	3.54	3.54	3.54	3.54	3.54	1.77	0.00
Portable Light Plant - Moon Glo's	0.054	5.15	7.30	7.30	7.30	7.30	7.30	5.15	5.15	5.15	1.72	1.72	0.00
Road Broom	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.050	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.198	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.00	0.00
Skid Steer-Wheeled	0.066	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	0.53	0.00
Skid Steer - Track	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.091	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	0.00
40' Manlift	0.091	0.73	0.73	0.73	0.73	0.73	0.73	0.36	0.36	0.36	0.36	0.36	0.00
40' Manlift	0.091	6.53	6.53	6.53	5.08	5.08	5.08	5.08	5.08	2.18	2.18	1.45	0.00
60' Manlift	0.091	4.36	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	2.90	0.00
80' Manlift	0.091	2.18	2.18	2.18	2.18	2.18	2.18	2.90	2.90	2.90	2.18	1.45	0.00
120' Manlift	0.091	0.73	0.73	0.73	0.73	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.091	0.73	0.73	0.73	0.73	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.091	0.36	0.36	0.36	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.066	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.00
30,000 lb and Greater Straight Mast	0.116	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.050	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.00
9,000 - 10,000 lb Extendable	0.066	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.00
9,000 - 10,000 lb Extendable	0.066	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.06	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		84.92	105.20	107.18	106.89	102.60	104.06	101.72	98.48	81.53	78.50	69.14	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
SOx (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Plate Compactor	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Rough Terrain Crane 90-99 Ton	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Rough Terrain Crane 90-99 Ton	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Rough Terrain Crane 100-110 Ton	0.001	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01	0.01	0.01	0.00
Carry Deck Crane <15 Ton	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00
Crane Hyd/C 265 Ton	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00
300 - 350 Amp Diesel Welder	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
1 - 24 KW Generator	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.00
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer-Wheeled	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
60' Manlift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
80' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00
120' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.23	0.28	0.28	0.28	0.27	0.27	0.27	0.25	0.21	0.21	0.18	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
PM10 (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
Plate Compactor	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.04	0.04	0.04	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.08	0.08	0.08	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00
Rough Terrain Crane 100-110 Ton	0.010	0.08	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.08	0.08	0.08	0.00
Carry Deck Crane <15 Ton	0.006	0.09	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.09	0.09	0.09	0.00
Carry Deck Crane >15 Ton	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Crane Hyd/C 130-150 Ton	0.010	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.24	0.04	0.04	0.00
Crane Hyd/C 265 Ton	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.00
250 - 300 CFM Air Compressor - Diesel	0.001	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00
375 CFM Air Compressor - Diesel	0.001	0.02	0.02	0.02	0.04	0.04	0.07	0.07	0.07	0.07	0.09	0.09	0.00
1600 CFM Air Compressor - Diesel	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15	0.00
300 - 350 Amp Diesel Welder	0.001	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.00
1 - 24 KW Generator	0.001	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Portable Light Plant - Moon Glo's	0.001	0.12	0.16	0.16	0.16	0.16	0.16	0.12	0.12	0.12	0.04	0.04	0.00
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00
Skid Steer-Wheeled	0.003	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.03	0.00
Skid Steer - Track	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
40' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.001	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.00
60' Manlift	0.001	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.00
80' Manlift	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
120' Manlift	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
30,000 lb and Greater Straight Mast	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
9,000 - 10,000 lb Extendable	0.003	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00
9,000 - 10,000 lb Extendable	0.003	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		2.60	3.09	3.19	3.21	3.03	3.05	3.02	2.86	2.24	2.13	1.89	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
PM2.5 (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
Plate Compactor	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.04	0.04	0.04	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.08	0.08	0.08	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.00
Rough Terrain Crane 100-110 Ton	0.010	0.08	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.08	0.08	0.08	0.00
Carry Deck Crane <15 Ton	0.006	0.09	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.09	0.09	0.09	0.00
Carry Deck Crane >15 Ton	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Crane Hyd/C 130-150 Ton	0.010	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.24	0.04	0.04	0.00
Crane Hyd/C 265 Ton	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
175-225 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
175-225 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00
230-250 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04	0.04	0.04	0.00
250 - 300 CFM Air Compressor - Diesel	0.001	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00
375 CFM Air Compressor - Diesel	0.001	0.02	0.02	0.02	0.04	0.04	0.06	0.06	0.06	0.06	0.08	0.08	0.00
1600 CFM Air Compressor - Diesel	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.00
300 - 350 Amp Diesel Welder	0.001	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.00
1 - 24 KW Generator	0.001	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Portable Light Plant - Moon Glo's	0.001	0.12	0.16	0.16	0.16	0.16	0.16	0.12	0.12	0.12	0.04	0.04	0.00
Road Broom	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00
Skid Steer-Wheeled	0.003	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.03	0.00
Skid Steer - Track	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
40' Manlift	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
40' Manlift	0.001	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.00
60' Manlift	0.001	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.00
80' Manlift	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
120' Manlift	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.001	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
30,000 lb and Greater Straight Mast	0.006	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
9,000 - 10,000 lb Extendable	0.003	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00
9,000 - 10,000 lb Extendable	0.003	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		2.55	3.04	3.14	3.16	2.98	3.00	2.97	2.81	2.20	2.07	1.84	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 3 by Peak Day in the Month											
CO2 (lb/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	36.319	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	36.319	145.28	145.28	145.28	145.28	145.28	145.28	145.28	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	102.308	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	36.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	64.930	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	97.206	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	30.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	776.20	776.20	776.20	776.20	776.20	776.20	776.20	776.20	776.20	776.20	0.00
Plate Compactor	4.310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	73.751	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	295.00	295.00	295.00	0.00
Rough Terrain Crane 80-89 Ton	73.751	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	0.00
Rough Terrain Crane 90-99 Ton	73.751	1180.01	1180.01	1180.01	1180.01	1180.01	1180.01	1180.01	1180.01	590.01	590.01	590.01	0.00
Rough Terrain Crane 90-99 Ton	73.751	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	885.01	0.00
Rough Terrain Crane 100-110 Ton	73.751	590.01	2950.03	2950.03	2950.03	2950.03	2950.03	2950.03	2950.03	590.01	590.01	590.01	0.00
Carry Deck Crane <15 Ton	49.050	784.81	1177.21	1177.21	1177.21	1177.21	1177.21	1177.21	784.81	784.81	784.81	784.81	0.00
Carry Deck Crane >15 Ton	49.050	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	0.00
Crane Hyd/C 130-150 Ton	73.751	2360.02	2360.02	2360.02	2360.02	2360.02	2360.02	2360.02	2360.02	######	295.00	295.00	0.00
Crane Hyd/C 265 Ton	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00
175-225 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00
175-225 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	123.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	492.40	492.40	492.40	492.40	0.00
230-250 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00	0.00	0.00	0.00	492.40	492.40	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00
300-330 Ton Lattice Crawler Crane	123.100	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	492.40	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	492.40	492.40	492.40	492.40	0.00
601- 800 Ton Lattice Crawler Crane	213.607	0.00	0.00	854.43	854.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	1258.11	1258.11	1258.11	1258.11	1258.11	1258.11	1258.11	1258.11	629.06	629.06	629.06	0.00
250 - 300 CFM Air Compressor - Diesel	19.658	314.53	314.53	314.53	629.06	629.06	629.06	629.06	629.06	629.06	629.06	629.06	0.00
375 CFM Air Compressor - Diesel	19.658	314.53	314.53	314.53	629.06	629.06	943.58	943.58	943.58	943.58	943.58	1258.11	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3097.52	3097.52	0.00
300 - 350 Amp Diesel Welder	8.577	1029.30	1029.30	1029.30	1029.30	1029.30	1029.30	1029.30	1029.30	######	1029.30	1029.30	0.00
1 - 24 KW Generator	20.059	962.84	962.84	962.84	641.89	641.89	641.89	641.89	641.89	641.89	641.89	320.95	0.00
Portable Light Plant - Moon Glo's	6.906	662.93	939.15	939.15	939.15	939.15	939.15	662.93	662.93	662.93	220.98	220.98	0.00
Road Broom	38.369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	38.369	153.48	153.48	153.48	153.48	153.48	153.48	153.48	153.48	153.48	153.48	153.48	0.00
Cat IT28, 928, 930, 938 Loader	62.950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	87.529	350.12	350.12	350.12	350.12	350.12	350.12	350.12	350.12	350.12	350.12	0.00	0.00
Skid Steer-Wheeled	36.319	581.11	581.11	581.11	581.11	581.11	581.11	581.11	581.11	581.11	581.11	290.55	0.00
Skid Steer - Track	36.319	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	18.396	294.34	294.34	294.34	294.34	294.34	294.34	294.34	294.34	294.34	294.34	294.34	0.00
40' Manlift	18.396	147.17	147.17	147.17	147.17	147.17	147.17	73.58	73.58	73.58	73.58	73.58	0.00
40' Manlift	18.396	1324.52	1324.52	1324.52	1030.18	1030.18	1030.18	1030.18	1030.18	441.51	441.51	294.34	0.00
60' Manlift	18.396	883.01	1030.18	1030.18	1030.18	1030.18	1030.18	1030.18	1030.18	######	1030.18	588.67	0.00
80' Manlift	18.396	441.51	441.51	441.51	441.51	441.51	441.51	588.67	588.67	588.67	441.51	294.34	0.00
120' Manlift	18.396	147.17	147.17	147.17	147.17	73.58	73.58	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	18.396	147.17	147.17	147.17	147.17	73.58	73.58	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	18.396	73.58	73.58	73.58	73.58	73.58	73.58	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	45.111	0.00	0.00	0.00	0.00	0.00	0.00	360.89	360.89	360.89	360.89	0.00	0.00
30,000 lb and Greater Straight Mast	58.826	235.30	235.30	235.30	235.30	235.30	235.30	235.30	235.30	235.30	235.30	235.30	0.00
30,000 lb and Greater Straight Mast	58.826	235.30	235.30	235.30	235.30	235.30	235.30	235.30	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	31.041	248.33	248.33	248.33	248.33	248.33	248.33	248.33	248.33	248.33	248.33	248.33	0.00
9,000 - 10,000 lb Extendable	45.111	360.89	360.89	360.89	360.89	360.89	360.89	360.89	360.89	360.89	360.89	360.89	0.00
9,000 - 10,000 lb Extendable	45.111	1082.67	1082.67	1082.67	1082.67	1082.67	1082.67	1082.67	1082.67	######	1082.67	721.78	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.479	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	59.106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		23590.84	27542.85	28397.27	28411.05	26917.05	27231.58	27169.08	25806.09	######	21903.84	18992.20	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table A7 - Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 3 by Peak Day in the Month											
Fuel (gal/day)	**2023**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
JD-210, Case 580 - Box Blades	1.614	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.614	6.46	6.46	6.46	6.46	6.46	6.46	6.46	0.00	0.00	0.00	0.00	0.00
Cat 14 Grader	4.547	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 TO 25 MT (CAT 320,321)	2.886	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 TO 35 MT (CAT 328,329)	4.320	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	1.375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	34.50	34.50	34.50	34.50	34.50	34.50	34.50	34.50	34.50	34.50	0.00
Plate Compactor	0.197	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Crane 70-79 Ton	3.278	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	13.11	13.11	13.11	0.00
Rough Terrain Crane 80-89 Ton	3.278	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	0.00
Rough Terrain Crane 90-99 Ton	3.278	52.44	52.44	52.44	52.44	52.44	52.44	52.44	26.22	26.22	26.22	26.22	0.00
Rough Terrain Crane 90-99 Ton	3.278	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	0.00
Rough Terrain Crane 100-110 Ton	3.278	26.22	131.11	131.11	131.11	131.11	131.11	131.11	131.11	26.22	26.22	26.22	0.00
Carry Deck Crane <15 Ton	2.180	34.88	52.32	52.32	52.32	52.32	52.32	52.32	34.88	34.88	34.88	34.88	0.00
Carry Deck Crane >15 Ton	2.180	8.72	8.72	8.72	8.72	8.72	8.72	8.72	8.72	8.72	8.72	8.72	0.00
Crane Hyd/C 130-150 Ton	3.278	104.89	104.89	104.89	104.89	104.89	104.89	104.89	104.89	78.67	13.11	13.11	0.00
Crane Hyd/C 265 Ton	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00
175-225 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00
175-225 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00	0.00	0.00	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.471	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.88	21.88	21.88	21.88	0.00
230-250 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00	0.00	0.00	0.00	21.88	21.88	0.00	0.00	0.00	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00
300-330 Ton Lattice Crawler Crane	5.471	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	21.88	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.88	21.88	21.88	21.88	0.00
601- 800 Ton Lattice Crawler Crane	9.493	0.00	0.00	37.97	37.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	55.92	55.92	55.92	55.92	55.92	55.92	55.92	55.92	27.96	27.96	27.96	0.00
250 - 300 CFM Air Compressor - Diesel	0.874	13.98	13.98	13.98	27.96	27.96	27.96	27.96	27.96	27.96	27.96	27.96	0.00
375 CFM Air Compressor - Diesel	0.874	13.98	13.98	13.98	27.96	27.96	41.94	41.94	41.94	41.94	55.92	55.92	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	137.67	137.67	0.00
300 - 350 Amp Diesel Welder	0.391	46.94	46.94	46.94	46.94	46.94	46.94	46.94	46.94	46.94	46.94	46.94	0.00
1 - 24 KW Generator	0.892	42.79	42.79	42.79	28.53	28.53	28.53	28.53	28.53	28.53	28.53	14.26	0.00
Portable Light Plant - Moon Glo's	0.704	67.62	95.80	95.80	95.80	95.80	95.80	67.62	67.62	67.62	22.54	22.54	0.00
Road Broom	1.705	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Broom	1.705	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	0.00
Cat IT28, 928, 930, 938 Loader	2.798	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	3.890	15.56	15.56	15.56	15.56	15.56	15.56	15.56	15.56	15.56	15.56	0.00	0.00
Skid Steer-Wheeled	1.614	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	12.91	0.00
Skid Steer - Track	1.614	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough Terrain Scissor Lift	0.818	13.08	13.08	13.08	13.08	13.08	13.08	13.08	13.08	13.08	13.08	13.08	0.00
40' Manlift	0.818	6.54	6.54	6.54	6.54	6.54	6.54	3.27	3.27	3.27	3.27	3.27	0.00
40' Manlift	0.818	58.87	58.87	58.87	45.79	45.79	45.79	45.79	45.79	19.62	19.62	13.08	0.00
60' Manlift	0.818	39.24	45.79	45.79	45.79	45.79	45.79	45.79	45.79	45.79	45.79	26.16	0.00
80' Manlift	0.818	19.62	19.62	19.62	19.62	19.62	19.62	26.16	26.16	26.16	19.62	13.08	0.00
120' Manlift	0.818	6.54	6.54	6.54	6.54	3.27	3.27	0.00	0.00	0.00	0.00	0.00	0.00
135' Manlift	0.818	6.54	6.54	6.54	6.54	3.27	3.27	0.00	0.00	0.00	0.00	0.00	0.00
150' Manlift	0.818	3.27	3.27	3.27	3.27	3.27	3.27	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	2.005	0.00	0.00	0.00	0.00	0.00	0.00	16.04	16.04	16.04	0.00	0.00	0.00
30,000 lb and Greater Straight Mast	2.614	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	0.00
30,000 lb and Greater Straight Mast	2.614	10.46	10.46	10.46	10.46	10.46	10.46	10.46	0.00	0.00	0.00	0.00	0.00
6,000 - 8,000 lb Extendable	1.380	11.04	11.04	11.04	11.04	11.04	11.04	11.04	11.04	11.04	11.04	11.04	0.00
9,000 - 10,000 lb Extendable	2.005	16.04	16.04	16.04	16.04	16.04	16.04	16.04	16.04	16.04	16.04	16.04	0.00
9,000 - 10,000 lb Extendable	2.005	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	32.08	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.266	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusion Machine >36" Ips	2.627	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1087.82	1279.36	1317.33	1317.95	1251.55	1265.53	1246.85	1186.27	952.94	987.40	858.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment A
AltAir Renewable Fuels Project

Table A8 - Year 1 - Onsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	2	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Light Vehicles	2	6	6	6	6	6	6	8	9	9	9	9	9
Total Light Vehicle Miles		12	12	12	12	12	12	16	18	18	18	18	18
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	2
Delivery Truck	2	37	137	108	32	17	7	6	7	7	9	16	19
Fuel/Lube/Mechanic Truck	2	5	5	5	5	5	5	7	7	7	7	7	9
Misc. MD Truck	5	2	2	2	2	2	2	2	2	2	2	2	2
Total Medium Truck Miles		98	298	240	88	58	38	40	42	42	46	60	70
Dump/Concrete Truck	2	15	33	40	63	76	96	112	90	122	129	129	91
HD Water Truck/Tractor	2	0	0	0	0	0	0	1	1	1	1	2	2
Bus	2	16	24	20	12	8	6	28	28	28	30	26	18
Misc. HD Truck	2	3	3	3	3	3	3	3	3	1	1	2	2
Total Heavy Truck Miles		68	120	126	156	174	210	288	244	304	322	318	226

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000953	0.01	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Heavy Duty	0.0002455	0.02	0.03	0.03	0.04	0.04	0.05	0.07	0.06	0.07	0.08	0.08	0.06
Total		0.03	0.06	0.05	0.05	0.05	0.06	0.08	0.06	0.08	0.08	0.08	0.06
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Medium Duty	0.0027172	0.27	0.81	0.65	0.24	0.16	0.10	0.11	0.11	0.11	0.12	0.16	0.19
Heavy Duty	0.0014305	0.10	0.17	0.18	0.22	0.25	0.30	0.41	0.35	0.43	0.46	0.45	0.32
Total		0.39	1.00	0.86	0.49	0.43	0.43	0.55	0.50	0.58	0.62	0.65	0.55
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0009121	0.09	0.27	0.22	0.08	0.05	0.03	0.04	0.04	0.04	0.04	0.05	0.06
Heavy Duty	0.0084708	0.58	1.02	1.07	1.32	1.47	1.78	2.44	2.07	2.58	2.73	2.69	1.91
Total		0.67	1.29	1.29	1.40	1.53	1.82	2.48	2.11	2.62	2.77	2.75	1.98
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000298	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total		0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001505	0.01	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heavy Duty Exhaust	0.0003260	0.02	0.04	0.04	0.05	0.06	0.07	0.09	0.08	0.10	0.10	0.10	0.07
Total Exhaust PM		0.04	0.09	0.08	0.07	0.07	0.08	0.10	0.09	0.11	0.11	0.11	0.09
Light Duty Fugitive(2)	0.000221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.05	0.14	0.11	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Heavy Duty Fugitive(2)	0.002314	0.16	0.28	0.29	0.36	0.40	0.49	0.67	0.56	0.70	0.75	0.74	0.52
Total Fugitive PM		0.21	0.42	0.41	0.40	0.43	0.51	0.69	0.59	0.73	0.77	0.77	0.56
Total		0.24	0.50	0.48	0.47	0.50	0.58	0.79	0.68	0.83	0.88	0.88	0.65
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000729	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Heavy Duty Exhaust	0.0001857	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.04
Total Exhaust PM		0.02	0.04	0.04	0.04	0.04	0.04	0.06	0.05	0.06	0.06	0.06	0.05
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.02	0.05	0.04	0.04	0.04	0.04	0.06	0.05	0.06	0.06	0.06	0.05
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	8.22	8.22	8.22	8.22	8.22	8.22	10.96	12.34	12.34	12.34	12.34	12.34
Medium Duty	1.159	113.62	345.49	278.25	102.02	67.24	44.06	46.37	48.69	48.69	53.33	69.56	81.16
Heavy Duty	3.421	232.65	410.55	431.08	533.72	595.30	718.46	985.32	834.79	1040.06	1101.64	1087.96	773.20
Total		354.49	764.27	717.55	643.96	670.77	770.74	1042.66	895.82	1101.09	1167.31	1169.86	866.70

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment A
AltAir Renewable Fuels Project

Table A9 - Year 2 - Onsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	2	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Light Vehicles	2	9	11	11	12	12	12	12	12	12	13	13	13
Total Light Vehicle Miles		18	22	22	24	24	24	24	24	24	26	26	26
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	2
Delivery Truck	2	43	52	32	43	65	15	15	17	17	15	18	17
Fuel/Lube Truck	2	9	9	9	11	9	9	7	7	7	7	7	7
Misc. MD Truck	5	2	2	2	2	2	2	2	2	2	2	0	0
Total Medium Truck Miles		118	136	96	122	162	62	58	62	62	58	54	52
Dump/Concrete Truck	2	124	109	144	115	55	10	8	11	2	0	0	0
Semi-Tractor, Diesel 20 Ton	2	2	2	2	1	1	1	1	1	1	1	0	0
Bus	2	18	26	30	36	36	46	50	64	66	56	60	48
Misc. HD Truck	2	3	11	10	7	4	9	7	5	3	3	3	3
Total Heavy Truck Miles		294	296	372	318	192	132	132	162	144	120	126	102

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000338	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000654	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0001559	0.05	0.05	0.06	0.05	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02
Total		0.05	0.06	0.07	0.06	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0017506	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05
Medium Duty	0.0022870	0.27	0.31	0.22	0.28	0.37	0.14	0.13	0.14	0.14	0.13	0.12	0.12
Heavy Duty	0.0011544	0.34	0.34	0.43	0.37	0.22	0.15	0.15	0.19	0.17	0.14	0.15	0.12
Total		0.64	0.69	0.69	0.69	0.63	0.34	0.33	0.37	0.35	0.32	0.31	0.28
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0001801	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0006821	0.08	0.09	0.07	0.08	0.11	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Heavy Duty	0.0072378	2.13	2.14	2.69	2.30	1.39	0.96	0.96	1.17	1.04	0.87	0.91	0.74
Total		2.21	2.24	2.76	2.39	1.50	1.00	1.00	1.22	1.09	0.91	0.95	0.78
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000289	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001423	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heavy Duty Exhaust	0.0002770	0.08	0.08	0.10	0.09	0.05	0.04	0.04	0.04	0.04	0.03	0.03	0.03
Total Exhaust PM		0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04
Light Duty Fugitive[2]	0.000221	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Medium Duty Fugitve[2]	0.000467	0.06	0.06	0.04	0.06	0.08	0.03	0.03	0.03	0.03	0.03	0.03	0.02
Heavy Duty Fugitive[2]	0.002314	0.68	0.69	0.86	0.74	0.44	0.31	0.31	0.37	0.33	0.28	0.29	0.24
Total Fugitive PM		0.74	0.75	0.91	0.80	0.53	0.34	0.34	0.41	0.37	0.31	0.32	0.27
Total		0.84	0.86	1.03	0.91	0.60	0.39	0.39	0.47	0.42	0.35	0.37	0.30
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000447	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000648	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001388	0.04	0.04	0.05	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Total Exhaust PM		0.05	0.05	0.06	0.05	0.04	0.02	0.02	0.03	0.03	0.02	0.02	0.02
Light Duty Fugitive[2]	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.05	0.05	0.06	0.05	0.04	0.02	0.02	0.03	0.03	0.02	0.02	0.02
CO_{2EQ}	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.665	11.96	14.62	14.62	15.95	15.95	15.95	15.95	15.95	15.95	17.28	17.28	17.28
Medium Duty	1.124	132.65	152.88	107.92	137.15	182.11	69.70	65.20	69.70	69.70	65.20	60.70	58.46
Heavy Duty	3.325	977.48	984.13	1236.81	1057.27	638.35	438.87	438.87	538.61	478.76	398.97	418.92	339.12
Total		1122.09	1151.63	1359.35	1210.37	836.41	524.51	520.02	624.26	564.41	481.45	496.90	414.86

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment A
AltAir Renewable Fuels Project

Table A10 - Year 3 - Onsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	2	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Light Vehicles	2	13	7	7	13	13	13	13	12	12	12	12	0
Total Light Vehicle Miles		26	14	14	26	26	26	26	24	24	24	24	0
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	0
Delivery Truck	2	14	13	12	12	10	10	9	9	9	8	8	0
Fuel/Lube Truck	2	7	2	2	7	7	7	7	7	7	7	7	0
Misc. MD Truck	5	2	2	2	2	2	2	2	2	2	2	0	0
Total Medium Truck Miles		56	44	42	52	48	48	46	46	46	44	34	0
Dump/Concrete Truck	2	0	0	0	0	0	0	0	0	0	0	0	0
Semi-Tractor, Diesel 20 Ton	2	0	0	0	0	0	0	0	0	0	0	0	0
Bus	2	36	36	38	30	20	16	16	18	14	12	6	4
Misc. HD Truck	2	3	3	1	1	1	1	1	1	1	1	1	1
Total Heavy Truck Miles		78	78	78	62	42	34	34	38	30	26	14	10

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000296	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000524	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0016139	0.04	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00
Medium Duty	0.0020146	0.11	0.09	0.08	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.07	0.00
Heavy Duty	0.0009297	0.07	0.07	0.07	0.06	0.04	0.03	0.03	0.04	0.03	0.02	0.01	0.01
Total		0.23	0.18	0.18	0.20	0.18	0.17	0.17	0.17	0.16	0.15	0.12	0.01
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0001590	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0004915	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Heavy Duty	0.0054073	0.42	0.42	0.42	0.34	0.23	0.18	0.18	0.21	0.16	0.14	0.08	0.05
Total		0.45	0.45	0.44	0.36	0.25	0.21	0.21	0.23	0.19	0.17	0.10	0.05
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001344	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Heavy Duty Exhaust	0.0002576	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Total Exhaust PM		0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Light Duty Fugitive[2]	0.000221	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Medium Duty Fugitve[2]	0.000467	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Heavy Duty Fugitive[2]	0.002314	0.18	0.18	0.18	0.14	0.10	0.08	0.08	0.09	0.07	0.06	0.03	0.02
Total Fugitive PM		0.21	0.20	0.20	0.17	0.13	0.11	0.11	0.11	0.10	0.09	0.05	0.02
Total		0.24	0.23	0.23	0.20	0.15	0.12	0.12	0.13	0.11	0.10	0.06	0.03
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000445	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000570	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001202	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Light Duty Fugitive[2]	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
CO_{2EQ}	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.644	16.74	9.01	9.01	16.74	16.74	16.74	16.74	15.45	15.45	15.45	15.45	0.00
Medium Duty	1.087	60.85	47.81	45.64	56.51	52.16	52.16	49.99	49.99	49.99	47.81	36.95	0.00
Heavy Duty	3.147	245.46	245.46	245.46	195.11	132.17	107.00	107.00	119.58	94.41	81.82	44.06	31.47
Total		323.05	302.29	300.11	268.35	201.07	175.89	173.72	185.02	159.84	145.08	96.45	31.47

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2)
(0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks,
and 24 for heavy trucks)

Attachment A
AltAir Renewable Fuels Project

Table A 11 - Year 1 - Offsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cars	29.4	317	450	364	236	129	116	533	526	555	585	516	339
Pickup Trucks	29.4	6	6	6	6	6	6	8	9	9	9	9	9
Total Light Vehicle Miles		9496.2	13406.4	10878	7114.8	3969	3586.8	15905.4	15729	16581.6	17463.6	15435	10231.2
Water Truck	40	2	2	2	2	2	2	2	2	2	2	2	2
Delivery Truck	40	37	137	108	32	17	7	6	7	7	9	16	19
Fuel/Lube Truck	40	5	5	5	5	5	5	7	7	7	7	7	9
Misc. MD Truck	40	2	2	2	2	2	2	2	2	2	2	2	2
Total Medium Truck Miles		1840	5840	4680	1640	1040	640	680	720	720	800	1080	1280
Dump/Concrete Truck	300	15	33	40	63	76	96	112	90	122	129	129	91
Semi-Tractor, Diesel 20 Ton	40	0	0	0	0	0	0	1	1	1	1	2	2
Bus	5	16	24	20	12	8	6	28	28	28	30	26	18
Misc. HD Truck	40	3	3	3	3	3	3	3	3	1	1	2	2
Total Heavy Truck Miles		4700	10140	12220	19080	22960	28950	33900	27300	36820	38930	38990	27550

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.37	0.52	0.42	0.28	0.15	0.14	0.62	0.61	0.64	0.68	0.60	0.40
Medium Duty	0.0000953	0.18	0.56	0.45	0.16	0.10	0.06	0.06	0.07	0.07	0.08	0.10	0.12
Heavy Duty	0.0002455	1.15	2.49	3.00	4.68	5.64	7.11	8.32	6.70	9.04	9.56	9.57	6.76
Total		1.70	3.57	3.87	5.12	5.89	7.31	9.00	7.38	9.75	10.31	10.27	7.28
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	18.16	25.64	20.80	13.61	7.59	6.86	30.42	30.08	31.71	33.40	29.52	19.57
Medium Duty	0.0027172	5.00	15.87	12.72	4.46	2.83	1.74	1.85	1.96	1.96	2.17	2.93	3.48
Heavy Duty	0.0014305	6.72	14.50	17.48	27.29	32.84	41.41	48.49	39.05	52.67	55.69	55.77	39.41
Total		29.88	56.01	51.00	45.36	43.26	50.01	80.76	71.09	86.34	91.26	88.23	62.45
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	1.94	2.74	2.22	1.46	0.81	0.73	3.25	3.22	3.39	3.57	3.16	2.09
Medium Duty	0.0009121	1.68	5.33	4.27	1.50	0.95	0.58	0.62	0.66	0.66	0.73	0.99	1.17
Heavy Duty	0.0084708	39.81	85.89	103.51	161.62	194.49	245.23	287.16	231.25	311.89	329.77	330.27	233.37
Total		43.43	93.96	110.01	164.57	196.25	246.55	291.03	235.13	315.94	334.07	334.42	236.63
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.06	0.09	0.07	0.05	0.03	0.02	0.11	0.11	0.11	0.12	0.10	0.07
Medium Duty	0.0000112	0.02	0.07	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heavy Duty	0.0000298	0.14	0.30	0.36	0.57	0.68	0.86	1.01	0.81	1.10	1.16	1.16	0.82
Total		0.22	0.46	0.49	0.63	0.72	0.89	1.12	0.93	1.22	1.29	1.28	0.90
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	1.01	1.43	1.16	0.76	0.42	0.38	1.70	1.68	1.77	1.86	1.65	1.09
Medium Duty Exhaust	0.0001505	0.28	0.88	0.70	0.25	0.16	0.10	0.10	0.11	0.11	0.12	0.16	0.19
Heavy Duty Exhaust	0.0003260	1.53	3.31	3.98	6.22	7.49	9.44	11.05	8.90	12.00	12.69	12.71	8.98
Total Exhaust PM		2.82	5.62	5.85	7.23	8.07	9.92	12.85	10.69	13.88	14.68	14.52	10.27
Light Duty Fugitive(2)	0.000221	2.10	2.96	2.40	1.57	0.88	0.79	3.52	3.48	3.66	3.86	3.41	2.26
Medium Duty Fugitve(2)	0.000467	0.86	2.73	2.19	0.77	0.49	0.30	0.32	0.34	0.34	0.37	0.50	0.60
Heavy Duty Fugitive(2)	0.002314	10.88	23.47	28.28	44.16	53.14	67.00	78.45	63.18	85.21	90.10	90.23	63.76
Total Fugitive PM		13.84	29.16	32.87	46.50	54.50	68.09	82.29	66.99	89.21	94.33	94.15	66.62
Total		16.66	34.78	38.72	53.72	62.57	78.01	95.14	77.68	103.10	109.01	108.67	76.89
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.43	0.60	0.49	0.32	0.18	0.16	0.71	0.71	0.74	0.78	0.69	0.46
Medium Duty Exhaust	0.0000729	0.13	0.43	0.34	0.12	0.08	0.05	0.05	0.05	0.05	0.06	0.08	0.09
Heavy Duty Exhaust	0.0001857	0.87	1.88	2.27	3.54	4.26	5.38	6.30	5.07	6.84	7.23	7.24	5.12
Total Exhaust PM		1.43	2.91	3.10	3.98	4.52	5.59	7.06	5.83	7.64	8.07	8.01	5.67
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1.44	2.92	3.11	3.99	4.52	5.59	7.06	5.83	7.64	8.07	8.02	5.67
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	6507.78	9187.46	7454.74	4875.80	2719.97	2458.05	10900.03	10779.15	11363.44	11967.87	10577.67	7011.48
Medium Duty	1.159	2133.25	6770.74	5425.87	1901.37	1205.75	742.00	788.37	834.75	834.75	927.50	1252.12	1484.00
Heavy Duty	3.421	16079.90	34691.53	41807.74	65277.55	78552.02	99045.34	115980.56	93400.27	125970.62	133189.47	133394.74	94255.58
Total		24720.93	50649.73	54688.34	72054.72	82477.74	102245.39	127668.96	105014.16	138168.80	146084.84	145224.53	102751.06

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment A
AltAir Renewable Fuels Project

Table A12 - Year 2 - Offsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cars	29.4	344	508	589	683	685	908	978	1263	1300	1098	1182	944
Pickup Trucks	29.4	9	11	11	12	12	12	12	12	12	13	13	13
Total Light Vehicle Miles		10378.2	15258.6	17640	20433	20491.8	27048	29106	37485	38572.8	32663.4	35133	28135.8
Water Truck	40	2	2	2	2	2	2	2	2	2	2	2	2
Delivery Truck	40	43	52	32	43	65	15	15	17	17	15	18	17
Fuel/Lube Truck	40	9	9	9	11	9	9	7	7	7	7	7	7
Misc. MD Truck	40	2	2	2	2	2	2	2	2	2	2	0	0
Total Medium Truck Miles		2240	2600	1800	2320	3120	1120	1040	1120	1120	1040	1080	1040
Dump/Concrete Truck	300	124	109	144	115	55	10	8	11	2	0	0	0
Semi-Tractor, Diesel 20 Ton	40	2	2	2	1	1	1	1	1	1	1	0	0
Bus	5	18	26	30	36	36	46	50	64	66	56	60	48
Misc. HD Truck	40	3	11	10	7	4	9	7	5	3	3	3	3
Total Heavy Truck Miles		37490	33350	43830	35000	16880	3630	2970	3860	1090	440	420	360

	Emission Rate (lb/mi)[1]	Month (lb/day)											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000338	0.35	0.52	0.60	0.69	0.69	0.91	0.98	1.27	1.30	1.10	1.19	0.95
Medium Duty	0.0000654	0.15	0.17	0.12	0.15	0.20	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Heavy Duty	0.0001559	5.84	5.20	6.83	5.46	2.63	0.57	0.46	0.60	0.17	0.07	0.07	0.06
Total		6.34	5.88	7.55	6.30	3.53	1.55	1.52	1.94	1.55	1.24	1.32	1.08
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0017506	18.17	26.71	30.88	35.77	35.87	47.35	50.95	65.62	67.53	57.18	61.50	49.26
Medium Duty	0.0022870	5.12	5.95	4.12	5.31	7.14	2.56	2.38	2.56	2.56	2.38	2.47	2.38
Heavy Duty	0.0011544	43.28	38.50	50.60	40.40	19.49	4.19	3.43	4.46	1.26	0.51	0.48	0.42
Total		66.57	71.16	85.59	81.48	62.49	54.10	56.76	72.64	71.35	60.07	64.46	52.05
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0001801	1.87	2.75	3.18	3.68	3.69	4.87	5.24	6.75	6.95	5.88	6.33	5.07
Medium Duty	0.0006821	1.53	1.77	1.23	1.58	2.13	0.76	0.71	0.76	0.76	0.71	0.74	0.71
Heavy Duty	0.0072378	271.34	241.38	317.23	253.32	122.17	26.27	21.50	27.94	7.89	3.18	3.04	2.61
Total		274.74	245.90	321.64	258.58	127.99	31.91	27.45	35.45	15.60	9.78	10.10	8.38
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000065	0.07	0.10	0.12	0.13	0.13	0.18	0.19	0.24	0.25	0.21	0.23	0.18
Medium Duty	0.0000108	0.02	0.03	0.02	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heavy Duty	0.0000289	1.08	0.96	1.27	1.01	0.49	0.10	0.09	0.11	0.03	0.01	0.01	0.01
Total		1.17	1.09	1.40	1.17	0.65	0.29	0.29	0.37	0.30	0.24	0.25	0.21
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001066	1.11	1.63	1.88	2.18	2.18	2.88	3.10	3.99	4.11	3.48	3.74	3.00
Medium Duty Exhaust	0.0001423	0.32	0.37	0.26	0.33	0.44	0.16	0.15	0.16	0.16	0.15	0.15	0.15
Heavy Duty Exhaust	0.0002770	10.39	9.24	12.14	9.70	4.68	1.01	0.82	1.07	0.30	0.12	0.12	0.10
Total Exhaust PM		11.81	11.23	14.28	12.20	7.30	4.05	4.07	5.22	4.57	3.75	4.01	3.25
Light Duty Fugitive[2]	0.000221	2.29	3.37	3.90	4.52	4.53	5.98	6.43	8.28	8.53	7.22	7.76	6.22
Medium Duty Fugitve[2]	0.000467	1.05	1.21	0.84	1.08	1.46	0.52	0.49	0.52	0.52	0.49	0.50	0.49
Heavy Duty Fugitive[2]	0.002314	86.76	77.18	101.44	81.00	39.07	8.40	6.87	8.93	2.52	1.02	0.97	0.83
Total Fugitive PM		90.10	81.77	106.18	86.60	45.05	14.90	13.79	17.74	11.57	8.72	9.24	7.54
Total		101.91	93.00	120.45	98.80	52.36	18.95	17.86	22.96	16.14	12.47	13.26	10.78
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000447	0.46	0.68	0.79	0.91	0.92	1.21	1.30	1.67	1.72	1.46	1.57	1.26
Medium Duty Exhaust	0.0000648	0.15	0.17	0.12	0.15	0.20	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Heavy Duty Exhaust	0.0001388	5.20	4.63	6.09	4.86	2.34	0.50	0.41	0.54	0.15	0.06	0.06	0.05
Total Exhaust PM		5.81	5.48	6.99	5.92	3.46	1.78	1.78	2.28	1.95	1.59	1.70	1.37
Light Duty Fugitive[2]	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		5.82	5.48	6.99	5.93	3.47	1.79	1.78	2.28	1.95	1.59	1.70	1.38
CO_{2EQ}	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.665	6897.15	10140.56	11723.19	13579.37	13618.44	17975.56	19343.27	24911.79	25634.72	21707.45	23348.70	18698.50
Medium Duty	1.124	2518.09	2922.79	2023.47	2608.03	3507.35	1259.05	1169.12	1259.05	1259.05	1169.12	1214.08	1169.12
Heavy Duty	3.325	124644.84	110880.38	145723.75	116366.22	56121.76	12068.84	9874.50	12833.53	3623.98	1462.89	1396.39	1196.91
Total		134060.08	123943.73	159470.42	132553.61	73247.55	31303.45	30386.89	39004.37	30517.74	24339.45	25959.17	21064.52

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment A
AltAir Renewable Fuels Project

Table A13 - Year 3 - Offsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cars	29.4	717	714	735	589	371	284	305	323	278	209	109	50
Pickup Trucks	29.4	13	7	7	13	13	13	13	12	12	12	12	0
Total Light Vehicle Miles		21462	21197.4	21814.8	17698.8	11289.6	8731.8	9349.2	9849	8526	6497.4	3557.4	1470
Water Truck	40	2	2	2	2	2	2	2	2	2	2	2	0
Delivery Truck	40	14	13	12	12	10	10	9	9	9	8	8	0
Fuel/Lube Truck	40	7	2	2	7	7	7	7	7	7	7	7	0
Misc. MD Truck	40	2	2	2	2	2	2	2	2	2	2	0	0
Total Medium Truck Miles		1000	760	720	920	840	840	800	800	800	760	680	0
Dump/Concrete Truck	300	0	0	0	0	0	0	0	0	0	0	0	0
Semi-Tractor, Diesel 20 Ton	40	0	0	0	0	0	0	0	0	0	0	0	0
Bus	5	36	36	38	30	20	16	16	18	14	12	6	4
Misc. HD Truck	40	3	3	1	1	1	1	1	1	1	1	1	1
Total Heavy Truck Miles		300	300	230	190	140	120	120	130	110	100	70	60

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000296	0.63	0.63	0.65	0.52	0.33	0.26	0.28	0.29	0.25	0.19	0.11	0.04
Medium Duty	0.0000451	0.05	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.00
Heavy Duty	0.0000524	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Total		0.70	0.68	0.69	0.58	0.38	0.30	0.32	0.33	0.29	0.23	0.14	0.05
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0016139	34.64	34.21	35.21	28.56	18.22	14.09	15.09	15.89	13.76	10.49	5.74	2.37
Medium Duty	0.0020146	2.01	1.53	1.45	1.85	1.69	1.69	1.61	1.61	1.61	1.53	1.37	0.00
Heavy Duty	0.0009297	0.28	0.28	0.21	0.18	0.13	0.11	0.11	0.12	0.10	0.09	0.07	0.06
Total		36.93	36.02	36.87	30.59	20.04	15.90	16.81	17.63	15.47	12.11	7.18	2.43
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0001590	3.41	3.37	3.47	2.81	1.79	1.39	1.49	1.57	1.36	1.03	0.57	0.23
Medium Duty	0.0004915	0.49	0.37	0.35	0.45	0.41	0.41	0.39	0.39	0.39	0.37	0.33	0.00
Heavy Duty	0.0054073	1.62	1.62	1.24	1.03	0.76	0.65	0.65	0.70	0.59	0.54	0.38	0.32
Total		5.53	5.37	5.07	4.29	2.96	2.45	2.53	2.66	2.34	1.95	1.28	0.56
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000063	0.14	0.13	0.14	0.11	0.07	0.06	0.06	0.06	0.05	0.04	0.02	0.01
Medium Duty	0.0000105	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Heavy Duty	0.0000273	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.15	0.15	0.15	0.13	0.08	0.07	0.07	0.07	0.07	0.05	0.03	0.01
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001063	2.28	2.25	2.32	1.88	1.20	0.93	0.99	1.05	0.91	0.69	0.38	0.16
Medium Duty Exhaust	0.0001344	0.13	0.10	0.10	0.12	0.11	0.11	0.11	0.11	0.11	0.10	0.09	0.00
Heavy Duty Exhaust	0.0002576	0.08	0.08	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.02
Total Exhaust PM		2.49	2.43	2.48	2.05	1.35	1.07	1.13	1.19	1.04	0.82	0.49	0.17
Light Duty Fugitive[2]	0.000221	4.74	4.68	4.82	3.91	2.50	1.93	2.07	2.18	1.88	1.44	0.79	0.32
Medium Duty Fugitve[2]	0.000467	0.47	0.36	0.34	0.43	0.39	0.39	0.37	0.37	0.37	0.36	0.32	0.00
Heavy Duty Fugitive[2]	0.002314	0.69	0.69	0.53	0.44	0.32	0.28	0.28	0.30	0.25	0.23	0.16	0.14
Total Fugitive PM		5.90	5.73	5.69	4.78	3.21	2.60	2.72	2.85	2.51	2.02	1.27	0.46
Total		8.40	8.17	8.17	6.84	4.56	3.67	3.85	4.04	3.56	2.84	1.75	0.64
PM2.5	**Month**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Light Duty Exhaust	0.0000445	0.95	0.94	0.97	0.79	0.50	0.39	0.42	0.44	0.38	0.29	0.16	0.07
Medium Duty Exhaust	0.0000570	0.06	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.00
Heavy Duty Exhaust	0.0001202	0.04	0.04	0.03	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Total Exhaust PM		1.05	1.02	1.04	0.86	0.57	0.45	0.48	0.50	0.44	0.34	0.21	0.07
Light Duty Fugitive[2]	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1.05	1.02	1.04	0.86	0.57	0.45	0.48	0.50	0.44	0.35	0.21	0.07
CO_{2EQ}	**Month**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Light Duty	0.644	13815.35	13645.03	14042.46	11392.94	7267.25	5620.77	6018.20	6339.92	5488.29	4182.46	2289.94	946.26
Medium Duty	1.087	1086.70	825.89	782.42	999.76	912.82	912.82	869.36	869.36	869.36	825.89	738.95	0.00
Heavy Duty	3.147	944.08	944.08	723.79	597.92	440.57	377.63	377.63	409.10	346.16	314.69	220.28	188.82
Total		15846.13	15414.99	15548.67	12990.61	8620.65	6911.22	7265.18	7618.38	6703.81	5323.04	3249.18	1135.07

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

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Table A14 - Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip[1]	Trips/Day
Light Vehicles	0.05	13
Total Light Vehicle Miles		0.65
Delivey Trucks	0.05	40
Water Trucks	0.1	6
Total Medium Truck Miles		2.6
Dump Trucks	0.05	200
Semi-Tractor, Diesel 20 Ton	0.05	5
Total Heavy Truck Miles		10.25
Tractors	0.05	3
Fork Lifts	0.05	6
Loader/Backhoe	0.05	16
Total Heavy-Heavy Duty Miles		1.25

PM10	Emission Rate (lb/mi)[2]	Emissions (lb/day)
Light Duty	0.9021196	0.59
Medium Duty	1.2863357	3.34
Heavy Duty	2.1931267	22.48
Heavy Heavy Duty	2.4962390	3.12
Uncontrolled Total		29.53
Controlled Total[3]		11.52

(1) Assumes approximately 250 feet of travel on unpaved road for most vehicles and double (500 feet) for water trucks.

(2) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(3) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

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AltAir Renewable Fuels Project

Table A15 - Paint Emissions

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Volume paint applied per day (gal)	0.0	0.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	0.0
VOC content (lb/gal)[1]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
VOC Emissions (lb/day)	0.0	0.0	0.0	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	0.0	0.0

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(1) Based on SCAQMD Rule 1113 VOC limit of 100g/L for industrial maintenance coatings.

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Table A16 - Peak Monthly Fugitive PM Construction Emissions

Grading/Digging Operations	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	3	3	8	0.348	0.39	3.25	3.25	8.34327652	8.34327652	Table A9-9-F

Stockpiles	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	2000	2000	0.00005	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	20	1	1	0.120	0.120	0.120	0.001	0.001	Table A9-9-E

Filling and Dumping	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9
Truck Dumping	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9

TOTAL PM10 Pounds/day	Average	Peak
(Controlled Emissions)	3.4942	3.49419
(Uncontrolled Emissions)	8.654	8.654

(1) Emissions (lbs/hr) = [0.75 x $(G^{1.5})/(H^{1.4})$ x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x $[(G/5)^{1.3}/(H/2)^{1.4}]$ x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

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ATTACHMENT B

UNMITIGATED PIPELINE CONSTRUCTION EMISSIONS CALCULATIONS

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Attachment B
Alt Air Renewable Fuels Project
Southern California Gas Company Pipeline
Table B1 - Construction Emission Summary

	Year 1											
Emissions from Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	3.91	3.91	3.91	6.64	4.85	4.85	3.01	3.01	0.00	0.00	0.00	0.00
CO (lb/day)	32.02	32.02	32.02	50.86	37.19	37.19	21.33	21.33	0.00	0.00	0.00	0.00
NOx (lb/day)	35.98	35.98	35.98	59.53	42.63	42.63	24.15	24.15	0.00	0.00	0.00	0.00
SOx (lb/day)	0.06	0.06	0.06	0.12	0.07	0.07	0.04	0.04	0.00	0.00	0.00	0.00
PM10 (lb/day)	1.61	1.61	1.61	2.71	2.04	2.04	1.16	1.16	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	1.49	1.49	1.49	2.49	1.88	1.88	1.07	1.07	0.00	0.00	0.00	0.00
CO_2 (lb/day)	5682.91	5682.91	5682.91	12123.63	6986.82	6986.82	3975.14	3975.14	0.00	0.00	0.00	0.00
CO_2 (tonnes/yr)												521.49

	Year 1											
Emission from Trips - Subtotal	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.22	0.22	0.22	0.34	0.34	0.34	0.34	0.34	0.00	0.00	0.00	0.00
CO (lb/day)	6.10	6.10	6.10	6.79	6.79	6.79	6.79	6.79	0.00	0.00	0.00	0.00
NOx (lb/day)	4.19	4.19	4.19	8.26	8.26	8.26	8.26	8.26	0.00	0.00	0.00	0.00
SOx (lb/day)	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00
PM10 (lb/day)	2.05	2.05	2.05	3.32	3.32	3.32	3.32	3.32	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.44	0.44	0.44	0.60	0.60	0.60	0.60	0.60	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	1.62	1.62	1.62	2.73	2.73	2.73	2.73	2.73	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.71	0.71	0.71	1.06	1.06	1.06	1.06	1.06	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.44	0.44	0.44	0.60	0.60	0.60	0.60	0.60	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.27	0.27	0.27	0.46	0.46	0.46	0.46	0.46	0.00	0.00	0.00	0.00
CO_2 (lb/day)	3410.78	3410.78	3410.78	5057.09	5057.09	5057.09	5057.09	5057.09	0.00	0.00	0.00	0.00

	Year 1											
Emission from Trips - Onsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
NOx (lb/day)	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
SOx (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (lb/day)	5.99	5.99	5.99	10.10	10.10	10.10	10.10	10.10	0.00	0.00	0.00	0.00

	Year 1											
Emission from Trips - Offsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.22	0.22	0.22	0.34	0.34	0.34	0.34	0.34	0.00	0.00	0.00	0.00
CO (lb/day)	6.09	6.09	6.09	6.78	6.78	6.78	6.78	6.78	0.00	0.00	0.00	0.00
NOx (lb/day)	4.18	4.18	4.18	8.24	8.24	8.24	8.24	8.24	0.00	0.00	0.00	0.00
SOx (lb/day)	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00
PM10 (lb/day)	2.05	2.05	2.05	3.32	3.32	3.32	3.32	3.32	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.44	0.44	0.44	0.59	0.59	0.59	0.59	0.59	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	1.61	1.61	1.61	2.72	2.72	2.72	2.72	2.72	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.71	0.71	0.71	1.06	1.06	1.06	1.06	1.06	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.44	0.44	0.44	0.59	0.59	0.59	0.59	0.59	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.27	0.27	0.27	0.46	0.46	0.46	0.46	0.46	0.00	0.00	0.00	0.00
CO_2 (lb/day)	3404.79	3404.79	3404.79	5046.99	5046.99	5046.99	5046.99	5046.99	0.00	0.00	0.00	0.00

	Year 1											
Fugitive Earthmoving PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	1.12	1.12	1.12	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	0.33	0.33	0.33	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Offroad Fugitive PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Paint	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Year 1											
Total Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	4.1	4.1	4.1	7.0	5.2	5.2	3.4	3.4	0.0	0.0	0.0	0.0
CO (lb/day)	550	38.1	38.1	38.1	57.6	44.0	44.0	28.1	28.1	0.0	0.0	0.0	0.0
NOx (lb/day)	100	40.2	40.2	40.2	67.8	50.9	50.9	32.4	32.4	0.0	0.0	0.0	0.0
SOx (lb/day)	150	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
PM10 (lb/day)[1]	150	4.9	4.9	4.9	7.3	6.6	6.6	4.5	4.5	0.0	0.0	0.0	0.0
PM2.5 (lb/day)[1][2]	55	2.6	2.6	2.6	3.9	3.3	3.3	2.1	2.1	0.0	0.0	0.0	0.0
CO_2 (lb/day)	NA	5684.5	5684.5	5684.5	12125.9	6989.1	6989.1	3977.4	3977.4	0.0	0.0	0.0	0.0
CO_2 (MT/yr)	NA												521.65

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

Highlighted values are maximums.

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Attachment B
AltAir Renewable Fuels Project

Table B2 - Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2021 Emission Factors lb/hr[(1)]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
10 K Reachlift	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.18	0.00	0.01	0.00	45.05	2.00
65 hp sawcutting machine	OFF - ConstMin - Concrete/Industrial Saws	50	Diesel	0.03	0.24	0.22	0.00	0.01	0.01	30.20	1.38
Cat 335 Excavator	ConstMin - Excavators	300	Diesel	0.03	0.21	0.33	0.00	0.01	0.01	97.28	4.32
Cat D5 Sideboom	ConstMin - Cranes	175	Diesel	0.05	0.33	0.47	0.00	0.03	0.02	49.15	2.18
120 ton crane	ConstMin - Cranes	300	Diesel	0.05	0.25	0.59	0.00	0.02	0.02	74.00	3.29
Cat 446 Backhoe	ConstMin - Tractors/Loaders/Backhoes	100	Diesel	0.02	0.24	0.20	0.00	0.01	0.01	35.75	1.59
185 CFM air compressor	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
1200 CFM air compressors	Portable Equipment - Rental Compressor	600	Diesel	0.04	0.37	0.36	0.00	0.01	0.01	193.59	8.60
Mobile Light Towers	OFF - Light Commercial - Generator Sets	25	Diesel	0.01	0.07	0.11	0.00	0.00	0.00	13.33	0.61
75 K Generator	Portable Equipment - Rental Generator	75	Diesel	0.01	0.17	0.14	0.00	0.01	0.00	23.41	1.04
Lincoln 250 welding machine	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39
120 ton boring rig	ConstMin - Bore/Drill Rigs	300	Diesel	0.03	0.25	0.37	0.00	0.01	0.01	120.50	5.36
Cat AP 555F Paving Machine	ConstMin - Pavers	175	Diesel	0.04	0.44	0.40	0.00	0.02	0.02	76.41	3.40
cat PM 312 Cold Planer/grinder	ConstMin - Paving Equipment	300	Diesel	0.04	0.21	0.46	0.00	0.02	0.02	96.76	4.30
Cat CB 1.8 Asphalt roller	ConstMin - Rollers	25	Diesel	0.08	0.22	0.16	0.00	0.02	0.02	12.13	0.54
Cat DDS7 Asphalt roller	ConstMin - Rollers	100	Diesel	0.02	0.25	0.25	0.00	0.02	0.01	38.10	1.69

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used.*

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Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

		Year 1 by Peak Day in the Month											
Equipment (Pieces per Day)	**Hours (hr/day)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	8	2	2	2	2	2	2	2	2				
65 hp sawcutting machine	8	2	2	2	2								
Cat 335 Excavator	8	1	1	1	1	1	1						
Cat D5 Sideboom	8	2	2	2	2	2	2						
120 ton crane	8				1								
Cat 446 Backhoe	8	3	3	3	3	3	3						
185 CFM air compressor	8	2	2	2	2	2	2						
1200 CFM air compressors	8				2								
Mobile Light Towers	8	12	12	12	12	12	12	12	12				
75 K Generator	8	1	1	1	1	1	1	1	1				
Lincoln 250 welding machine	8	4	4	4	4	4	4						
120 ton boring rig	8				1								
Cat AP 555F Paving Machine	8				1	1	1	1	1				
cat PM 312 Cold Planer/grinder	8				1	1	1	1	1				
Cat CB 1.8 Asphalt roller	8				1	1	1	1	1				
Cat DDS7 Asphalt roller	8				1	1	1	1	1				

Number of pieces of equipment operating in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
VOC (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.012	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.032	0.51	0.51	0.51	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.031	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.046	0.74	0.74	0.74	0.74	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.050	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.019	0.46	0.46	0.46	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.006	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.039	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.013	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	0.00	0.00	0.00	0.00
75 K Generator	0.014	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.009	0.30	0.30	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.031	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.038	0.00	0.00	0.00	0.30	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.037	0.00	0.00	0.00	0.30	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.081	0.00	0.00	0.00	0.65	0.65	0.65	0.65	0.65	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.025	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00
Total		3.91	3.91	3.91	6.64	4.85	4.85	3.01	3.01	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.274	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.238	3.81	3.81	3.81	3.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.207	1.66	1.66	1.66	1.66	1.66	1.66	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.326	5.22	5.22	5.22	5.22	5.22	5.22	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.248	0.00	0.00	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.239	5.74	5.74	5.74	5.74	5.74	5.74	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.116	1.86	1.86	1.86	1.86	1.86	1.86	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.369	0.00	0.00	0.00	5.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.069	6.60	6.60	6.60	6.60	6.60	6.60	6.60	6.60	0.00	0.00	0.00	0.00
75 K Generator	0.170	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.043	1.39	1.39	1.39	1.39	1.39	1.39	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.247	0.00	0.00	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.437	0.00	0.00	0.00	3.50	3.50	3.50	3.50	3.50	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.211	0.00	0.00	0.00	1.69	1.69	1.69	1.69	1.69	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.224	0.00	0.00	0.00	1.79	1.79	1.79	1.79	1.79	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.251	0.00	0.00	0.00	2.01	2.01	2.01	2.01	2.01	0.00	0.00	0.00	0.00
Total		32.02	32.02	32.02	50.86	37.19	37.19	21.33	21.33	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
NOX (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.178	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.216	3.46	3.46	3.46	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.326	2.60	2.60	2.60	2.60	2.60	2.60	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.472	7.55	7.55	7.55	7.55	7.55	7.55	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.593	0.00	0.00	0.00	4.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.196	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.092	1.46	1.46	1.46	1.46	1.46	1.46	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.359	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.105	10.09	10.09	10.09	10.09	10.09	10.09	10.09	10.09	0.00	0.00	0.00	0.00
75 K Generator	0.138	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.068	2.17	2.17	2.17	2.17	2.17	2.17	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.368	0.00	0.00	0.00	2.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.395	0.00	0.00	0.00	3.16	3.16	3.16	3.16	3.16	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.458	0.00	0.00	0.00	3.66	3.66	3.66	3.66	3.66	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.157	0.00	0.00	0.00	1.26	1.26	1.26	1.26	1.26	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.254	0.00	0.00	0.00	2.03	2.03	2.03	2.03	2.03	0.00	0.00	0.00	0.00
Total		35.98	35.98	35.98	59.53	42.63	42.63	24.15	24.15	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
SOx (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.000	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.001	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.000	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.002	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.000	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
75 K Generator	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.001	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.001	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.001	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.06	0.06	0.06	0.12	0.07	0.07	0.04	0.04	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM10 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.005	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.010	0.16	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.010	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.025	0.41	0.41	0.41	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.024	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.011	0.27	0.27	0.27	0.27	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.015	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.005	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.00	0.00	0.00	0.00
75 K Generator	0.005	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.003	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.011	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.019	0.00	0.00	0.00	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.017	0.00	0.00	0.00	0.13	0.13	0.13	0.13	0.13	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.021	0.00	0.00	0.00	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.015	0.00	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.00
Total		1.61	1.61	1.61	2.71	2.04	2.04	1.16	1.16	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM2.5 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	0.005	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00
65 hp sawcutting machine	0.009	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	0.009	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	0.023	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	0.022	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.010	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.001	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	0.013	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.004	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.00	0.00	0.00	0.00
75 K Generator	0.005	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.003	0.09	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	0.010	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	0.018	0.00	0.00	0.00	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	0.015	0.00	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.020	0.00	0.00	0.00	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	0.014	0.00	0.00	0.00	0.11	0.11	0.11	0.11	0.11	0.00	0.00	0.00	0.00
Total		1.49	1.49	1.49	2.49	1.88	1.88	1.07	1.07	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO2 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	45.051	720.82	720.82	720.82	720.82	720.82	720.82	720.82	720.82	0.00	0.00	0.00	0.00
65 hp sawcutting machine	30.203	483.24	483.24	483.24	483.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	97.280	778.24	778.24	778.24	778.24	778.24	778.24	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	49.152	786.43	786.43	786.43	786.43	786.43	786.43	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	74.002	0.00	0.00	0.00	592.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	35.750	858.01	858.01	858.01	858.01	858.01	858.01	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	19.658	314.53	314.53	314.53	314.53	314.53	314.53	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	193.595	0.00	0.00	0.00	3097.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	13.332	1279.88	1279.88	1279.88	1279.88	1279.88	1279.88	1279.88	1279.88	0.00	0.00	0.00	0.00
75 K Generator	23.411	187.29	187.29	187.29	187.29	187.29	187.29	187.29	187.29	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	8.577	274.47	274.47	274.47	274.47	274.47	274.47	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	120.504	0.00	0.00	0.00	964.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	76.407	0.00	0.00	0.00	611.25	611.25	611.25	611.25	611.25	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	96.756	0.00	0.00	0.00	774.05	774.05	774.05	774.05	774.05	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	12.128	0.00	0.00	0.00	97.02	97.02	97.02	97.02	97.02	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	38.104	0.00	0.00	0.00	304.83	304.83	304.83	304.83	304.83	0.00	0.00	0.00	0.00
Total		5682.91	5682.91	5682.91	12123.63	6986.82	6986.82	3975.14	3975.14	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B3 - Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 1 by Peak Day in the Month											
Fuel (gal/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
10 K Reachlift	2.002	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	0.00	0.00	0.00	0.00
65 hp sawcutting machine	1.383	22.12	22.12	22.12	22.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 335 Excavator	4.324	34.59	34.59	34.59	34.59	34.59	34.59	0.00	0.00	0.00	0.00	0.00	0.00
Cat D5 Sideboom	2.184	34.95	34.95	34.95	34.95	34.95	34.95	0.00	0.00	0.00	0.00	0.00	0.00
120 ton crane	3.289	0.00	0.00	0.00	26.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	1.589	38.13	38.13	38.13	38.13	38.13	38.13	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.874	13.98	13.98	13.98	13.98	13.98	13.98	0.00	0.00	0.00	0.00	0.00	0.00
1200 CFM air compressors	8.604	0.00	0.00	0.00	137.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.608	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	0.00	0.00	0.00	0.00
75 K Generator	1.040	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.391	12.52	12.52	12.52	12.52	12.52	12.52	0.00	0.00	0.00	0.00	0.00	0.00
120 ton boring rig	5.356	0.00	0.00	0.00	42.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat AP 555F Paving Machine	3.396	0.00	0.00	0.00	27.17	27.17	27.17	27.17	27.17	0.00	0.00	0.00	0.00
cat PM 312 Cold Planer/grinder	4.300	0.00	0.00	0.00	34.40	34.40	34.40	34.40	34.40	0.00	0.00	0.00	0.00
Cat CB 1.8 Asphalt roller	0.539	0.00	0.00	0.00	4.31	4.31	4.31	4.31	4.31	0.00	0.00	0.00	0.00
Cat DDS7 Asphalt roller	1.693	0.00	0.00	0.00	13.55	13.55	13.55	13.55	13.55	0.00	0.00	0.00	0.00
Total		255.04	255.04	255.04	541.29	312.34	312.34	178.17	178.17	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment B
AltAir Renewable Fuels Project

Table B4 - Year 1 - Onsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	0.1	0	0	0	0	0	0	0	0				
Misc. Light Vehicles	0.1	24	24	24	24	24	24	24	24				
Total Light Vehicle Miles		2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	0	0	0	0
Water Truck	0.1	1	1	1	1	1	1	1	1				
Delivery Truck	0.1	4	4	4	4	4	4	4	4				
Fuel/Lube/Mechanic Truck	0.1	1	1	1	1	1	1	1	1				
Misc. MD Truck	0.1	2	2	2	2	2	2	2	2				
Total Medium Truck Miles		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0	0	0	0
Dump Truck	0.1	10	10	10	10	10	10	10	10				
Slurry Trucks	0.1	0	0	0	8	8	8	8	8				
Asphalt Trucks	0.1	0	0	0	4	4	4	4	4				
Misc. HD Truck	0.1	0	0	0	0	0	0	0	0				
Total Heavy Truck Miles		1	1	1	2.2	2.2	2.2	2.2	2.2	0	0	0	0

	Emission Rate (lb/mi)[1]	Month (lb/day)											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000953	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0002455	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0027172	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0014305	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0009121	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0084708	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001505	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0003260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.002314	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000729	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001857	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	0.00	0.00	0.00	0.00
Medium Duty	1.159	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.00	0.00	0.00
Heavy Duty	3.421	3.42	3.42	3.42	7.53	7.53	7.53	7.53	7.53	0.00	0.00	0.00	0.00
Total		5.99	5.99	5.99	10.10	10.10	10.10	10.10	10.10	0.00	0.00	0.00	0.00

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment B
AltAir Renewable Fuels Project

Table B5 - Year 1 - Offsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	29.4	50	50	50	50	50	50	50	50				
Misc. Light Vehicles	40	24	24	24	24	24	24	24	24				
Total Light Vehicle Miles		2430	2430	2430	2430	2430	2430	2430	2430	0	0	0	0
Water Truck	40	1	1	1	1	1	1	1	1				
Delivery Truck	40	4	4	4	4	4	4	4	4				
Fuel/Lube Truck	40	1	1	1	1	1	1	1	1				
Misc. MD Truck	40	2	2	2	2	2	2	2	2				
Total Medium Truck Miles		320	320	320	320	320	320	320	320	0	0	0	0
Dump Truck	40	10	10	10	10	10	10	10	10				
Slurry Trucks	40	0	0	0	8	8	8	8	8				
Asphalt Trucks	40	0	0	0	4	4	4	4	4				
Misc. HD Truck	40	0	0	0	0	0	0	0	0				
Total Heavy Truck Miles		400	400	400	880	880	880	880	880	0	0	0	0

	Emission Rate (lb/mi)[1]	Month (lb/day)											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00
Medium Duty	0.0000953	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00
Heavy Duty	0.0002455	0.10	0.10	0.10	0.22	0.22	0.22	0.22	0.22	0.00	0.00	0.00	0.00
Total		0.22	0.22	0.22	0.34	0.34	0.34	0.34	0.34	0.00	0.00	0.00	0.00
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	0.00	0.00	0.00	0.00
Medium Duty	0.0027172	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.00	0.00	0.00	0.00
Heavy Duty	0.0014305	0.57	0.57	0.57	1.26	1.26	1.26	1.26	1.26	0.00	0.00	0.00	0.00
Total		6.09	6.09	6.09	6.78	6.78	6.78	6.78	6.78	0.00	0.00	0.00	0.00
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.00	0.00	0.00	0.00
Medium Duty	0.0009121	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00
Heavy Duty	0.0084708	3.39	3.39	3.39	7.45	7.45	7.45	7.45	7.45	0.00	0.00	0.00	0.00
Total		4.18	4.18	4.18	8.24	8.24	8.24	8.24	8.24	0.00	0.00	0.00	0.00
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
Medium Duty	0.0000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000298	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00
Total		0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001505	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0003260	0.13	0.13	0.13	0.29	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00
Total Exhaust PM		0.44	0.44	0.44	0.59	0.59	0.59	0.59	0.59	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000221	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.002314	0.93	0.93	0.93	2.04	2.04	2.04	2.04	2.04	0.00	0.00	0.00	0.00
Total Fugitive PM		1.61	1.61	1.61	2.72	2.72	2.72	2.72	2.72	0.00	0.00	0.00	0.00
Total		2.05	2.05	2.05	3.32	3.32	3.32	3.32	3.32	0.00	0.00	0.00	0.00
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000729	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001857	0.07	0.07	0.07	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.00	0.00
Total Exhaust PM		0.21	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.21	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	1665.29	1665.29	1665.29	1665.29	1665.29	1665.29	1665.29	1665.29	0.00	0.00	0.00	0.00
Medium Duty	1.159	371.00	371.00	371.00	371.00	371.00	371.00	371.00	371.00	0.00	0.00	0.00	0.00
Heavy Duty	3.421	1368.50	1368.50	1368.50	3010.70	3010.70	3010.70	3010.70	3010.70	0.00	0.00	0.00	0.00
Total		3404.79	3404.79	3404.79	5046.99	5046.99	5046.99	5046.99	5046.99	0.00	0.00	0.00	0.00

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment B
AltAir Renewable Fuels Project

Table B6 - Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip[1]	Trips/Day
Light Vehicles	0.05	0
Total Light Vehicle Miles		0
Lube/Mechanic Trucks	0.05	0
Water Trucks	0.1	1
Total Medium Truck Miles		0.1
Dump Trucks	0.05	0
Misc. Heavy Trucks	0.05	0
Total Heavy Truck Miles		0
Tractor/Backhoe/Loader	0.05	1
Excavators	0.05	1
Total Heavy-Heavy Duty Miles		0.1

PM10	Emission Rate (lb/mi)[2]	Emissions (lb/day)
Light Duty	0.9021196	0.00
Medium Duty	1.2863357	0.13
Heavy Duty	2.1931267	0.00
Heavy Heavy Duty	2.4962390	0.25
Uncontrolled Total		0.38
Controlled Total[3]		0.15

(1) Assumes approximately 250 feet of travel on unpaved road for most vehicles and double (500 feet) for water trucks.

(2) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(3) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Attachment B
AltAir Renewable Fuels Project

Table B7 - Paint Emissions

Month	1	2	3	4	5	6	7	8	9	10	11	12
Volume paint applied per day (gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VOC content (lb/gal)[(1)]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
VOC Emissions (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(1) Based on SCAQMD Rule 1113 VOC limit of 100g/L for industrial maintenance coatings.

Attachment B
AltAir Renewable Fuels Project

Table B8 - Peak Monthly Fugitive PM Construction Emissions

Grading/Trenching Operations	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	1	1	8	0.348	0.39	1.08	1.08	2.78109217	2.78109217	Table A9-9-F

Stockpiles	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	170	170	0.00005	0.39	0.00341668	0.00341668	0.00876071	0.00876071	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	20	0.25	0.25	0.120	0.030	0.030	0.000	0.000	Table A9-9-E

Filling and Dumping	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	170.0	170.0	5.15E-05	0.39	0.00341668	0.00341668	0.00876071	0.00876071	Table A9-9
Truck Dumping	170.0	170.0	5.15E-05	0.39	0.00341668	0.00341668	0.00876071	0.00876071	Table A9-9

TOTAL PM10 Pounds/day	Average	Peak
(Controlled Emissions)	1.1248	1.12481
(Uncontrolled Emissions)	2.808	2.808

(1) Emissions (lbs/hr) = [0.75 x ($G^{1.5}$)/($H^{1.4}$) x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x [(G/5)$^{1.3}$/(H/2)$^{1.4}$] x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

ATTACHMENT C

UNMITIGATED PIPELINE MAINTENANCE EMISSIONS CALCULATIONS

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Attachment C
Alt Air Renewable Fuels Project
Pipeline Maintenance
Table C1 - Construction Emission Summary

	Year 1											
Emissions from Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	1.01	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	9.62	9.62	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx (lb/day)	10.12	10.12	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx (lb/day)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (lb/day)	1485.04	1485.04	1485.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (tonnes/yr)												45.47

	Year 1											
Emission from Trips - Subtotal	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	2.11	2.11	2.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx (lb/day)	0.68	0.68	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx (lb/day)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.49	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.19	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (lb/day)	909.89	909.89	909.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Emission from Trips - Onsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (lb/day)	1.15	1.15	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Emission from Trips - Offsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO (lb/day)	2.11	2.11	2.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx (lb/day)	0.68	0.68	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx (lb/day)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10 (lb/day)	0.49	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)	0.19	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exhuast PM (lb/day)	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive PM (lb/day)	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO_2 (lb/day)	908.74	908.74	908.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Fugitive Earthmoving PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Offroad Fugitive PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1											
Paint	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Year 1											
Total Emissions	**Thresholds**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
VOC (lb/day)	75	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO (lb/day)	550	11.7	11.7	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOx (lb/day)	100	10.8	10.8	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOx (lb/day)	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PM10 (lb/day)[1]	150	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PM2.5 (lb/day)[1][2]	55	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO_2 (lb/day)	NA	1485.5	1485.5	1485.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO_2 (MT/yr)	NA												45.48

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

Highlighted values are maximums.

Attachment C
AltAir Renewable Fuels Project

Table C2 - Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2021 Emission Factors lb/hr[1]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
Cat D5 Sideboom	ConstMin - Cranes	175	Diesel	0.05	0.33	0.47	0.00	0.03	0.02	49.15	2.18
Cat 446 Backhoe	ConstMin - Tractors/Loaders/Backhoes	100	Diesel	0.02	0.24	0.20	0.00	0.01	0.01	35.75	1.59
185 CFM air compressor	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
Mobile Light Towers	OFF - Light Commercial - Generator Sets	25	Diesel	0.01	0.07	0.11	0.00	0.00	0.00	13.33	0.61
75 K Generator	Portable Equipment - Rental Generator	75	Diesel	0.01	0.17	0.14	0.00	0.01	0.00	23.41	1.04
Lincoln 250 welding machine	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used.*

Attachment C
AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

		Year 1 by Peak Day in the Month											
Equipment (Pieces per Day)	**Hours (hr/day)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	8	1	1	1	0	0	0	0	0	0	0	0	0
Cat 446 Backhoe	8	2	2	2	0	0	0	0	0	0	0	0	0
185 CFM air compressor	8	1	1	1	0	0	0	0	0	0	0	0	0
Mobile Light Towers	8	1	1	1	0	0	0	0	0	0	0	0	0
75 K Generator	8	1	1	1	0	0	0	0	0	0	0	0	0
Lincoln 250 welding machine	8	1	1	1	0	0	0	0	0	0	0	0	0

Number of pieces of equipment operating in the peak day of the corrisponding month within the year.

Attachment C
AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
VOC (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.046	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.019	0.31	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.006	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.013	0.11	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.014	0.11	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.009	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1.01	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment C
AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.326	2.61	2.61	2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.239	3.82	3.82	3.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.116	0.93	0.93	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.069	0.55	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.170	1.36	1.36	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.043	0.35	0.35	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		9.62	9.62	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

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AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
NOX (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.472	3.77	3.77	3.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.196	3.13	3.13	3.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.092	0.73	0.73	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.105	0.84	0.84	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.138	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.068	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		10.12	10.12	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment C
AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
SOx (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.000	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

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AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM10 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.025	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.011	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.001	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.005	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.005	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.003	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

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AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
PM2.5 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	0.023	0.19	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	0.010	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.001	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.004	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	0.005	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.003	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

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AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 1 by Peak Day in the Month											
CO2 (lb/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	49.152	393.22	393.22	393.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	35.750	572.01	572.01	572.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	19.658	157.26	157.26	157.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	13.332	106.66	106.66	106.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	23.411	187.29	187.29	187.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	8.577	68.62	68.62	68.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1485.04	1485.04	1485.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment C
AltAir Renewable Fuels Project

Table C3 - Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 1 by Peak Day in the Month											
Fuel (gal/day)	**2021**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cat D5 Sideboom	2.184	17.48	17.48	17.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cat 446 Backhoe	1.589	25.42	25.42	25.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185 CFM air compressor	0.874	6.99	6.99	6.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Light Towers	0.608	4.86	4.86	4.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 K Generator	1.040	8.32	8.32	8.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln 250 welding machine	0.391	3.13	3.13	3.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		66.21	66.21	66.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emission in pounds per day in the peak day of the corrisponding month within the year.

Attachment C
AltAir Renewable Fuels Project

Table C4 - Year 1 - Onsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Light Vehicles	0.1	5	5	5	0	0	0	0	0	0	0	0	0
Total Light Vehicle Miles		0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
Water Truck	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Delivery Truck	0.1	2	2	2	0	0	0	0	0	0	0	0	0
Fuel/Lube/Mechanic Truck	0.1	1	1	1	0	0	0	0	0	0	0	0	0
Misc. MD Truck	0.1	1	1	1	0	0	0	0	0	0	0	0	0
Total Medium Truck Miles		0.4	0.4	0.4	0	0	0	0	0	0	0	0	0
Dump Truck	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Slurry Trucks	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt Trucks	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Misc. HD Truck	0.1	1	1	1	0	0	0	0	0	0	0	0	0
Total Heavy Truck Miles		0.1	0.1	0.1	0	0	0	0	0	0	0	0	0

	Emission Rate (lb/mi)[1]	**Month (lb/day)**											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000953	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0002455	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0027172	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0014305	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0009121	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0084708	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001505	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0003260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.002314	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000729	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001857	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	1.159	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	3.421	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		1.15	1.15	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment C
AltAir Renewable Fuels Project

Table C5 - Year 1 - Offsite Construction Vehicle Trip Emissions

		Month (Vehicles per day)											
Vehicle	**Miles per Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Commuters	29.4	20	20	20	0	0	0	0	0	0	0	0	0
Misc. Light Vehicles	40	5	5	5	0	0	0	0	0	0	0	0	0
Total Light Vehicle Miles		788	788	788	0	0	0	0	0	0	0	0	0
Water Truck	40	1	1	1	0	0	0	0	0	0	0	0	0
Delivery Truck	40	2	2	2	0	0	0	0	0	0	0	0	0
Fuel/Lube Truck	40	1	1	1	0	0	0	0	0	0	0	0	0
Misc. MD Truck	40	1	1	1	0	0	0	0	0	0	0	0	0
Total Medium Truck Miles		200	200	200	0	0	0	0	0	0	0	0	0
Dump Truck	40	0	0	0	0	0	0	0	0	0	0	0	0
Slurry Trucks	40	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt Trucks	40	0	0	0	0	0	0	0	0	0	0	0	0
Misc. HD Truck	40	1	1	1	0	0	0	0	0	0	0	0	0
Total Heavy Truck Miles		40	40	40	0	0	0	0	0	0	0	0	0

	Emission Rate (lb/mi)[1]	Month (lb/day)											
VOC	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000388	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000953	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0002455	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0019124	1.51	1.51	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0027172	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0014305	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		2.11	2.11	2.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0002045	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0009121	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0084708	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.68	0.68	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.0000067	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	0.0000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	0.0000298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM10	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0001068	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0001505	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0003260	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000221	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.002314	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.49	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty Exhaust	0.0000449	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Exhaust	0.0000729	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Exhaust	0.0001857	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Exhaust PM		0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Fugitive(2)	0.000054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive PM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO2EQ	**Month**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Light Duty	0.685	540.02	540.02	540.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty	1.159	231.87	231.87	231.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty	3.421	136.85	136.85	136.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		908.74	908.74	908.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(1) Emface2017 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Attachment C
AltAir Renewable Fuels Project

Table C6 - Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip[1]	Trips/Day
Light Vehicles	0.05	0
Total Light Vehicle Miles		0
Lube/Mechanic Trucks	0.05	0
Water Trucks	0.1	0
Total Medium Truck Miles		0
Dump Trucks	0.05	0
Misc. Heavy Trucks	0.05	0
Total Heavy Truck Miles		0
Tractor/Backhoe/Loader	0.05	0
Excavators	0.05	0
Total Heavy-Heavy Duty Miles		0

PM10	Emission Rate (lb/mi)[2]	Emissions (lb/day)
Light Duty	0.9021196	0.00
Medium Duty	1.2863357	0.00
Heavy Duty	2.1931267	0.00
Heavy Heavy Duty	2.4962390	0.00
Uncontrolled Total		0.00
Controlled Total[3]		0.00

(1) Assumes approximately 250 feet of travel on unpaved road for most vehicles and double (500 feet) for water trucks.

(2) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(3) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

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Table C7 - Paint Emissions

Month	1	2	3	4	5	6	7	8	9	10	11	12
Volume paint applied per day (gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VOC content (lb/gal)[(1)]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
VOC Emissions (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(1) Based on SCAQMD Rule 1113 VOC limit of 100g/L for industrial maintenance coatings.

Attachment C
AltAir Renewable Fuels Project

Table C8 - Peak Monthly Fugitive PM Construction Emissions

Grading/Trenching Operations	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	0	0	8	0.348	0.39	0.00	0.00	0	0	Table A9-9-F

Stockpiles	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	0	0	0.00005	0.39	0	0	0	0	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	20	0	0	0.120	0.000	0.000	0.000	0.000	Table A9-9-E

Filling and Dumping	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	0.0	0.0	5.15E-05	0.39	0	0	0	0	Table A9-9
Truck Dumping	0.0	0.0	5.15E-05	0.39	0	0	0	0	Table A9-9

TOTAL PM10 Pounds/day	Average	Peak
(Controlled Emissions)	0.0000	0.00000
(Uncontrolled Emissions)	0.000	0.000

(1) Emissions (lbs/hr) = [0.75 x $(G^{1.5})/(H^{1.4})$ x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x $[(G/5)^{1.3}/(H/2)^{1.4}]$ x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

Paramount Petroleum AltAir Renewable Fuels Project
South Coast AQMD Localized Significance Threshold Analysis

August 2021

Prepared for: World Energy LLC

By: Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
714-632-8521
www.envaudit.com

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INTRODUCTION

This Localized Significance Threshold (LST) analysis has been prepared to evaluate the potential impacts of the criteria pollutants carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM10), and particulate matter less than 2.5 microns in diameter (PM2.5) emitted by the construction activities associated with the proposed modifications to the AltAir Paramount Petroleum Refinery (Refinery) Renewable Fuels Project (Project).

The California Air Resources Board began implementing the Low Carbon Fuel Standard in 2011 (Title 17, California Code of Regulations, Sections 95480-95490). The Low Carbon Fuel Standard requires a reduction in greenhouse gas (GHG) emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. It was these state requirements that resulted in a partnership between the Paramount Petroleum Refinery and AltAir to produce renewable fuels at the Paramount Refinery.

AltAir has been in partnership with Paramount Petroleum since 2013, when the Paramount Refinery began the process of converting portions of their oil refinery into renewable fuels production, under the Paramount Petroleum AltAir Renewable Fuels Project (Renewable Fuels Project). Construction of the initial modifications to the Paramount Refinery to produce renewable fuels occurred between 2014 and 2015, and the facility began producing Renewable Fuels in 2016.

In 2018, World Energy purchased AltAir and the Paramount Refinery, and AltAir became a wholly-owned subsidiary of World Energy. Under World Energy, AltAir proposes to complete the conversion of the Paramount Refinery to manufacturing only renewable fuels.

AltAir is now proposing to revise the Renewable Fuels Project to include a more comprehensive conversion of the refinery. The Renewable Fuels Project will convert the remainder of the 50.000[1] barrel (42 gallons per barrel) per day crude oil refinery into a 25,000 barrels per day renewable fuels production facility. This conversion will: eliminate the refining of crude oil; support use of renewable jet fuel, diesel, gasoline and propane; reduce mobile fuel emissions.

Environmental Audit, Inc. (EAI) has calculated construction emissions to evaluate the potential impacts from construction activities associated with the changes to the Project. The LST analysis includes an air quality analysis of the criteria pollutants for the peak daily construction emissions from the Project. The results of this analysis are provided below.

FACILITY LOCATION

The Project is located at the existing Paramount Refinery located at 14700 Downey Avenue, Paramount, California (see Figure 1 and Figure 2). The City of Paramount is located east of the Los Angeles River and is approximately 16.5 miles southeast of downtown Los Angeles. The City

[1] The refinery capacity was approximately 50,000 barrels per day when operating. A throughput limit condition was later imposed on the refinery operation.

of Paramount is bounded by the cities of South Gate, Downey, Bellflower, Long Beach, Compton, and Lynwood. The Refinery is bounded by Lakewood Boulevard, Somerset Boulevard, Downey Avenue, and Contreras Street.

The Project also includes modifications to operations at the Lakewood Tank Farm. The Lakewood Tank Farm is located at 2920 56th Way, Lakewood, California (see Figure 1). Existing storage and pipeline facilities at the company's off-site Lakewood Tank Farm will was previously used to store gas oil and will change service to jet fuel storage and blending. However, no construction activities are required so no construction emissions would occur at the Lakewood Tank Farm.

The Refinery is located immediately west of the City of Bellflower municipal boundary lines, and approximately one-quarter mile south of the City of Downey boundary line. Regional access to the Refinery is provided by Interstates 605 and 710 which run north-south approximately two-and-one quarter miles east and west of the Refinery, respectively. State Route 91 runs east-west and is located approximately two miles south of the Refinery. Interstate 105 runs east-west and is located about three-quarters of a mile north of the Refinery (see Figure 1).

The Refinery accounts for slightly more than half of the total acreage within the Somerset Ranch Area of the 1990 Paramount General Plan. The Somerset Ranch Area of Paramount is designated as "Mixed Use" and includes a mix of residential, commercial, industrial, and public uses. The Refinery is zoned M-2, Heavy Manufacturing. The land use pattern varies widely in the Paramount area on a parcel by parcel basis and reflects an area in transition from a variety of older land uses (that include the Refinery) to newer development (including apartment houses and commercial land uses, e.g., grocery stores and a Walmart).

EMISSION ESTIMATES

Construction emission estimates for the peak day are calculated by each project component that will be under construction during that peak period for the proposed project. A summary of construction emissions is found on Table 1. More detailed construction emissions can be found in Exhibit A. Construction emissions vary based on activities and the worst-case scenario has been evaluated by assuming the peak day for each month occurs on each day of the month. It is expected that the calculated peak day emissions estimates will occur infrequently during the proposed project construction activities and, most of the time, construction emissions will be less.

Construction activities by month for the Project are calculated to determine the peak construction day, based on the updated construction schedule. Only on-site emissions sources are included, and though equipment (such as cranes) would be shared between project components, no equipment sharing was assumed for this LST analysis. Peak hourly emission rates were used for all averaging periods for CO, NO_2, and 1-hour averaging period for PM10 and PM2.5. Annual average emissions rates were used for annual averaging periods for PM10 and PM2.5. The use of peak hourly emission rates will overestimate results for annual averaging periods for NO_2, which is conservative. The peak on-site construction day for most project components is spread over 10 hours and is expected to occur during Year 2 Month 4 (PM10 and PM2.5) and Year 3 Month 3 (CO

and NO_2. Construction activities included in this evaluation are the use of construction equipment and fugitive dust emissions from earth moving activities.

CRITERIA POLLUTANT IMPACT MODELING

In order to determine the groundlevel concentrations associated with the peak construction activities, the U.S. EPA AERMOD air dispersion model was used to model the peak day construction emissions (see Table 1) and calculate the annual average and maximum 1-hour, 8-hour, and 24-hour concentrations. NO_2 emissions were estimated using a full conversion of NOx to NO_2.

The location of the source is identified based on data provided by AltAir and the South Gate USGS Quadrangle (see Figure 2). The dispersion model was run using the Long Beach meteorological data available from the South Coast AQMD and used regulatory defaults.

The model only includes area sources, which are not subject to building downwash effects. However, the model was set to include algorithms to model the effects of building downwash on emissions.

Terrain elevations were taken into account even though the facility and the vicinity are in a relatively flat area.

The AERMOD model was run using a receptor grid of 100 meters that extends at least 1,000 meters in every cardinal direction from the boundaries of the Refinery and any individual sensitive receptors (schools, parks, etc.) within the receptor grid (see Figure 2). The maximum impact location was determined for the applicable averaging periods from the AERMOD model output. The maximum groundlevel concentrations are presented in Table 2.

MODELED CRITERIA POLLUTANT IMPACT ANALYSIS

The Project maximum groundlevel concentrations were compared to the localized significance thresholds to determine if the Project would cause or contribute to a violation of any State or Federal ambient air quality standard. The ambient air quality data for South Coastal Los Angeles County and South Central Los Angeles County (Station No. 033 and 112) was used to establish background levels of the pollutants. Table 3 identifies the ambient air quality data for CO, NO_2, PM10, and PM2.5 published by the South Coast AQMD in the last three years (2017, 2018, and 2019).

The CO and NO_2 concentrations were combined with the ambient background concentrations and compared to the Most Stringent Air Quality Standard. The PM10 and PM2.5 24-hour, and PM10 and PM2.5 annual average concentrations were compared to the Significant Change in Air Quality Concentration thresholds. Impacts from other criteria pollutants are regional in nature or in attainment and, therefore, were not included as part of the localized air quality analysis. The maximum impact locations are shown in Figure 2.

State Standards

The maximum CO impact concentrations for 1-hour and 8-hour averages are 7,504.2 and 5,455.0 micrograms per cubic meter ($\mu g/m^3$), respectively. The maximum NO_2 impact concentrations for 1-hour and annual averages are 455.5 and 37.3 $\mu g/m^3$, respectively. The maximum PM10 impact concentrations for 24-hour and annual averages are 5.4 and 0.6 $\mu g/m^3$, respectively. The maximum PM2.5 impact concentrations for 24-hour and annual averages are 1.6 and 0.3 $\mu g/m^3$, respectively. Therefore, the Project modeling results exceed the State criteria pollutant significance threshold for 1-hour NO_2. The results are presented in Table 4.

Federal Standards

The maximum CO impact concentrations for 1-hour and 8-hour averages are 7,504.2 and 5,455.0 $\mu g/m^3$, respectively. The maximum NO_2 impact concentrations for 1-hour and annual averages are 373.9.8 and 37.3 $\mu g/m^3$, respectively. The maximum PM10 impact concentrations for 24-hour and annual averages are 5.4 and 0.6 $\mu g/m^3$, respectively. The maximum PM2.5 impact concentrations for 24-hour and annual averages are 1.6 and 0.3 $\mu g/m^3$, respectively. Therefore, the Project modeling results exceed the Federal criteria pollutant significance threshold for 1-hour NO_2. The results are presented in Table 4.

CONCLUSIONS

The emission impacts from the Project are expected to be greater than both state and federal air quality standards for 1-hour NO_2 during the peak of on-site construction. The emission impacts from the Proposed Project are expected to be less than the CO, annual NO_2, and PM emission standards during the construction phase.

TABLES

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Paramount Refinery Renewable Fuels Project
Localized Significance Threshold Analysis

Table 1. Onsite Construction Emission Summary for Peak Pollutants

	CO		NOx		PM10		PM2.5	
Total Emissions - lb/hr	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
Peak Hourly	3.90	9.07	1.66	4.96	0.67	0.62	0.22	0.17

Assumes 10 hour working days.

	CO		NOx		PM10		PM2.5	
Total Emissions - lb/day	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
Peak Daily	38.99	90.69	16.61	49.60	6.73	6.23	2.19	1.66

Paramount Refinery Renewable Fuels Project
Localized Significance Threshold Analysis

Table 2. Modeling Results

Criteria Pollutant	Averaging Period	Max Modeled GLC Conc. ($\mu g/m^3$)	UTME	UTMN
CO	1-hr	519.7	393900	3751300
	8-hr	188.0	393900	3751300
NO_2	1-hr	269.2	393900	3751300
	1-hr (98%)	248.3	393900	3751300
	Annual	7.1	393900	3751300
PM10	24-hr	5.4	393900	3751300
	Annual	0.6	393900	3751300
PM2.5	24-hr	1.6	393900	3751300
	Annual	0.3	393900	3751300

Model results based on the last 5 years of available meterological data from SCAQMD for Long Beach.

Table 3. Ambient Concentrations

Criteria Pollutant	Averaging Period	Concentration (ppb)			Max Conc.	
		2017	2018	2019	(ppb)	($\mu g/m^3$)
CO	1-hr	6100	4700	3800	6100	6984.50
	8-hr	4600	3500	3200	4600	5267.00
NO_2	1-hr	99.1	68.3	70	99.1	186.31
	1-hr (98%)	66.8	55.6	52.8	66.8	125.58
	AAM	16.1	15	14.1	16.1	30.27
		Concentration ($\mu g/m^3$)				
PM10	24-hr	79	84	74		84.0
	AAM	33.3	32.3	26.9		33.3
PM2.5	24-hr	66.7	43	39.5		66.7
	AAM	12.92	12.96	10.87		13.0

Data from South Coastal LA County Station 33 and South Central LA County Station 112

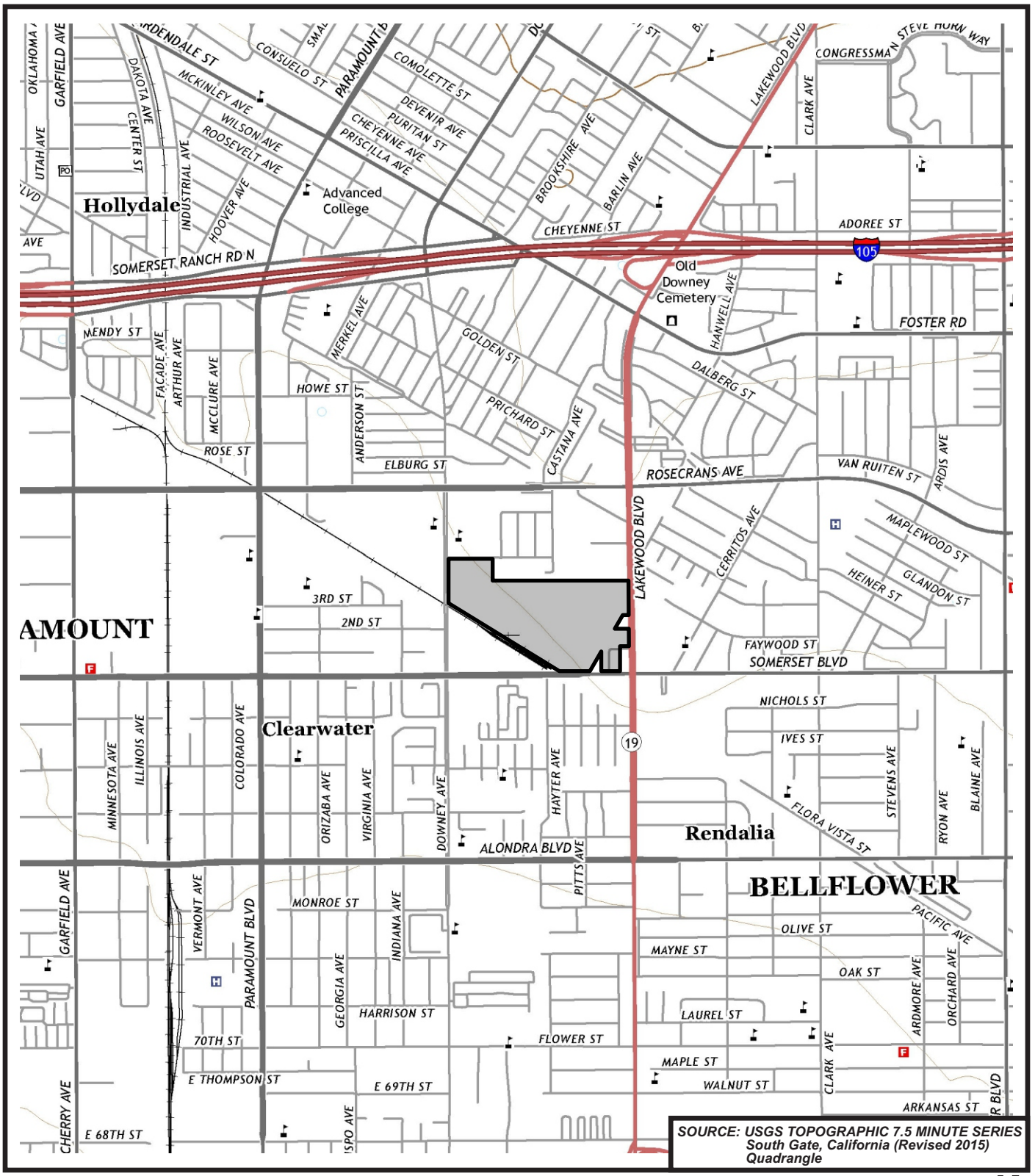
AAM = Annual Arithmetic Mean

Table 4. Localized Significance Threshold Summary

Criteria Pollutant	Averaging Period	Max Modeled GLC Conc. ($\mu g/m^3$)	Background GLC Conc. ($\mu g/m^3$)	Total GLC Conc. ($\mu g/m^3$)	Most Stringent Air Quality Standard ($\mu g/m^3$)	Significant
CO	1-hour	519.7	6984.5	7504.2	23000	NO
	8-hour	188.0	5267.0	5455.0	10000	NO
NO_2	1-hour	269.2	186.3	455.5	339	YES
	1-hour (Federal)	248.3	125.6	373.9	188	YES
	Annual	7.1	30.3	37.3	57	NO
PM10	24-hour	5.4	--	--	10.4	NO
	Annual	0.6	--	--	1	NO
PM2.5	24-hour	1.6	--	--	10.4	NO
	Annual	0.3	--	--	1	NO

FIGURES

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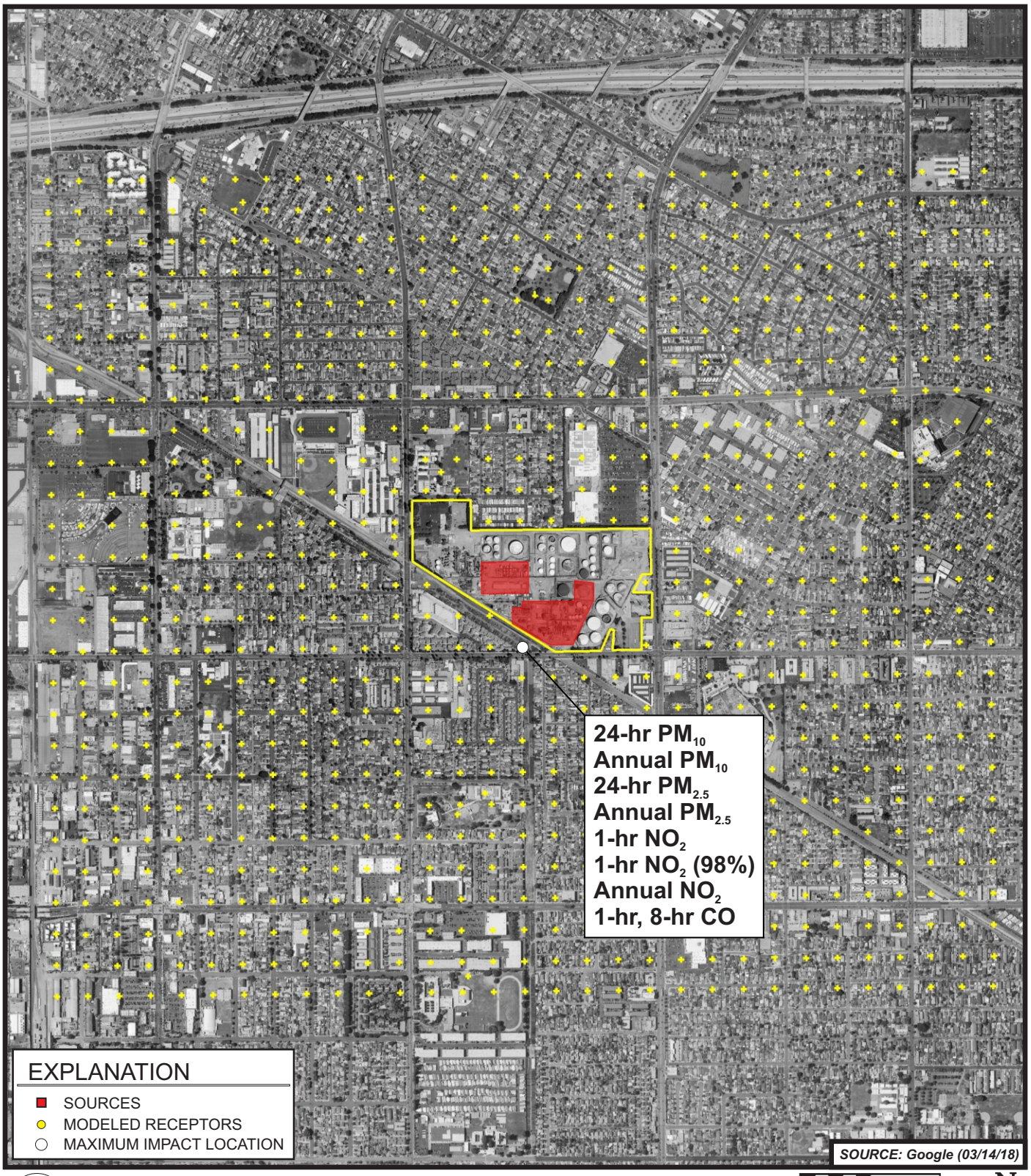
Environmental Audit, Inc.

SITE LOCATION MAP
PARAMOUNT PETROLEUM ALTAIR RENEWABLE FUELS PROJECT

Project No. 3119

Figure 1

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Environmental Audit, Inc.

LST MAXIMUM IMPACT LOCATION MAP
PARAMOUNT PETROLEUM ALTAIR RENEWABLE FUELS PROJECT

Project No. 3119

Figure 2

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EXHIBITS

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Exhibit A

CONSTRUCTION EMISSIONS CALCULATIONS

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Exhibit A
Alt Air Renewable Fuels Project
Total Project Component
Construction Emission Summary

	Year 1												Year 2												Year 3											
Emissions from Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)	64.14	69.79	75.20	77.54	75.55	72.57	78.06	78.84	91.36	102.30	105.18	133.96	133.76	143.64	142.67	143.08	123.25	129.37	117.57	119.68	133.83	140.45	137.45	141.60	134.43	169.34	174.00	172.86	165.83	167.69	160.07	152.57	132.02	119.49	102.30	0.00
NOx (lb/day)	35.30	39.76	45.10	45.37	43.78	41.40	43.50	44.23	49.71	55.19	56.71	68.58	62.21	64.63	65.82	66.75	60.13	65.01	61.56	64.21	80.26	85.69	85.50	88.58	84.92	105.20	107.18	106.89	102.60	104.06	101.72	98.48	81.53	78.50	69.14	0.00
PM10 (lb/day)	0.92	1.01	1.21	1.22	1.14	1.03	1.13	1.14	1.36	1.57	1.60	1.93	1.72	1.78	1.75	1.90	1.65	1.92	1.95	2.08	2.43	2.64	2.63	2.74	2.60	3.09	3.19	3.21	3.03	3.05	3.02	2.86	2.24	2.13	1.89	0.00
PM2.5 (lb/day)	0.91	1.00	1.19	1.21	1.13	1.01	1.12	1.13	1.34	1.56	1.58	1.91	1.71	1.77	1.73	1.89	1.64	1.91	1.93	2.06	2.41	2.62	2.61	2.71	2.55	3.04	3.14	3.16	2.98	3.00	2.97	2.81	2.20	2.07	1.84	0.00

	Year 1												Year 2												Year 3											
Emission from Trips - Onsite	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)	0.39	1.00	0.86	0.49	0.43	0.43	0.55	0.50	0.58	0.62	0.65	0.55	0.64	0.69	0.69	0.69	0.63	0.34	0.33	0.37	0.35	0.32	0.31	0.28	0.23	0.18	0.18	0.20	0.18	0.17	0.17	0.17	0.16	0.15	0.12	0.01
NOx (lb/day)	0.67	1.29	1.29	1.40	1.53	1.82	2.48	2.11	2.62	2.77	2.75	1.98	2.21	2.24	2.76	2.39	1.50	1.00	1.00	1.22	1.09	0.91	0.95	0.78	0.45	0.45	0.44	0.36	0.25	0.21	0.21	0.23	0.19	0.17	0.10	0.05
PM10 (lb/day)	0.24	0.50	0.48	0.47	0.50	0.58	0.79	0.68	0.83	0.88	0.88	0.65	0.84	0.86	1.03	0.91	0.60	0.39	0.39	0.47	0.42	0.35	0.37	0.30	0.24	0.23	0.23	0.20	0.15	0.12	0.12	0.13	0.11	0.10	0.06	0.03
Exhaust PM (lb/day)	0.04	0.09	0.08	0.07	0.07	0.08	0.10	0.09	0.11	0.11	0.11	0.09	0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Fugitive PM (lb/day)	0.21	0.42	0.41	0.40	0.43	0.51	0.69	0.59	0.73	0.77	0.77	0.56	0.74	0.75	0.91	0.80	0.53	0.34	0.34	0.41	0.37	0.31	0.32	0.27	0.21	0.20	0.20	0.17	0.13	0.11	0.11	0.11	0.10	0.09	0.05	0.02
PM2.5 (lb/day)	0.07	0.16	0.15	0.13	0.14	0.16	0.22	0.19	0.23	0.24	0.25	0.18	0.23	0.23	0.27	0.24	0.17	0.11	0.10	0.13	0.11	0.10	0.10	0.08	0.07	0.06	0.06	0.06	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.01
Exhaust PM (lb/day)	0.04	0.09	0.08	0.07	0.07	0.08	0.10	0.09	0.11	0.11	0.11	0.09	0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Fugitive PM (lb/day)	0.03	0.07	0.07	0.07	0.07	0.09	0.12	0.10	0.12	0.13	0.13	0.10	0.13	0.13	0.15	0.14	0.09	0.06	0.06	0.07	0.06	0.05	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00

	Year 1												Year 2												Year 3											
Fugitive Earthmoving PM - Peak	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Year 1												Year 2												Year 3											
Offroad Fugitive PM - Average	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	0.00
PM2.5 (lb/day)[1][2]	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.00

		Year 1												Year 2												Year 3											
Total Emissions	**Maximum**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)	174.18	64.53	70.79	76.06	78.02	75.98	73.00	78.61	79.33	91.94	102.92	105.83	134.51	134.40	144.33	143.36	143.77	123.88	129.70	117.89	120.05	134.18	140.76	137.76	141.88	134.66	169.53	**174.18**	173.07	166.01	167.86	160.24	152.73	132.18	119.64	102.43	0.01
NOx (lb/day)	107.63	35.97	41.05	46.39	46.77	45.31	43.22	45.98	46.34	52.33	57.96	59.47	70.56	64.42	66.87	68.58	69.14	61.64	66.01	62.56	65.43	81.35	86.60	86.45	89.36	85.37	105.65	**107.63**	107.26	102.85	104.27	101.93	98.71	81.72	78.67	69.23	0.05
PM10 (lb/day)[1]	7.91	6.26	6.61	6.79	6.79	6.74	6.70	7.02	6.91	7.29	7.56	7.58	7.67	7.66	7.73	7.88	**7.91**	7.36	7.40	7.43	7.64	4.45	4.60	4.60	4.64	4.44	4.93	5.03	5.01	4.78	4.78	4.75	4.60	3.95	3.83	3.55	0.03
PM2.5 (lb/day)[1][2]	3.49	2.26	2.44	2.63	2.63	2.55	2.46	2.62	2.60	2.86	3.09	3.11	3.38	3.22	3.29	3.29	3.42	3.10	3.30	3.32	3.48	2.80	2.99	2.98	3.07	2.89	3.38	3.48	**3.49**	3.29	3.31	3.28	3.12	2.50	2.37	2.13	0.01
PM10 (lb/day) - Annual Average[1]	6.99											**6.99**													6.61											4.52
PM2.5 (lb/day) - Annual Average[1][2]	3.19											2.72													**3.19**											3.02

(1) Mitigated PM.
(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls
Highlighted values are maximums.

App B Part 1 - 139

Exhibit A
Alt Air Renewable Fuels Project
LST Analysis
Modeling Source Emissions

	Peak CO		Peak NOx		Peak PM10		Peak PM2.5	
Total Emissions - lb/hr	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
CO	3.90	9.07						
NOx			1.66	4.96				
PM10 - Peak					0.67	0.62		
PM2.5 - Peak							0.22	0.17
PM10 - Annual Average					0.36	0.34		
PM2.5 - Annual Average							0.18	0.14

Assumes 10 hour working days.

	Peak CO		Peak NOx		Peak PM10		Peak PM2.5	
Total Emissions - lb/day	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
CO	38.99	90.69						
NOx			16.61	49.60				
PM10 - Peak Day					6.73	6.23		
PM2.5 - Peak Day							2.19	1.66
PM10 - Annual Average Day					3.63	3.36		
PM2.5 - Annual Average Day							1.81	1.37

Annual average PM emissions based on 1 year annual average PM for total construction. Total PM was proportionally divided between project areas based on peak day.

Exhibit A
Alt Air Renewable Fuels Project
Total Project Component
Construction Emission Summary

	Hydrogen Plant			Unit B			Totals		
Emissions from Equipment	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**
CO (lb/day)	65.44	38.86	43.39	12.24	90.50	82.34	77.68	129.37	125.73
NOx (lb/day)	33.79	16.02	15.49	8.38	48.99	45.25	42.18	65.01	60.74
PM10 (lb/day)	0.91	0.38	0.33	0.22	1.53	1.53	1.13	1.92	1.86
PM2.5 (lb/day)	0.89	0.38	0.32	0.22	1.52	1.51	1.11	1.91	1.83

	Hydrogen Plant			Unit B			Totals		
Emission from Trips - Onsite	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**
CO (lb/day)	0.30	0.13	0.13	0.45	0.19	0.14	0.76	0.32	0.27
NOx (lb/day)	1.18	0.59	0.37	1.69	0.62	0.37	2.87	1.20	0.74
PM10 (lb/day)	0.44	0.21	0.19	0.64	0.24	0.19	1.08	0.45	0.38
Exhuast PM (lb/day)	0.05	0.02	0.02	0.07	0.03	0.02	0.13	0.05	0.04
Fugitive PM (lb/day)	0.39	0.19	0.17	0.56	0.21	0.17	0.95	0.40	0.34
PM2.5 (lb/day)	0.03	0.06	0.05	0.17	0.06	0.05	0.20	0.12	0.10
Exhuast PM (lb/day)	0.03	0.02	0.02	0.07	0.03	0.02	0.10	0.05	0.04
Fugitive PM (lb/day)	0.00	0.03	0.03	0.10	0.04	0.03	0.10	0.07	0.06

	Hydrogen Plant			Unit B			Totals		
Fugitive Earthmoving PM - Peak	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**
PM10 (lb/day)[1]	1.75	0.00	0.00	1.75	0.00	0.00	3.49	0.00	0.00
PM2.5 (lb/day)[1][2]	0.51	0.00	0.00	0.51	0.00	0.00	1.01	0.00	0.00

	Hydrogen Plant			Unit B			Totals		
Offroad Fugitive PM - Peak	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**
PM10 (lb/day)[1]	3.63	0.83	0.73	3.63	0.83	0.73	7.26	1.67	1.45
PM2.5 (lb/day)[1][2]	0.76	0.18	0.15	0.76	0.18	0.15	1.52	0.35	0.30

		Hydrogen Plant			Unit B			Totals		
Total Emissions	**Thresholds**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**	**Year 2 Month 4**	**Year 3 Month 3**	**Year 3 Month 4**
CO (lb/day)	550	65.75	38.99	43.52	12.69	90.69	82.48	78.44	**129.68**	126.00
NOx (lb/day)	100	34.97	16.61	15.86	10.07	49.60	45.63	45.04	**66.21**	61.49
PM10 (lb/day)[1]	150	6.73	1.43	1.24	6.23	2.60	2.45	**12.96**	4.04	3.69
PM2.5 (lb/day)[1][2]	55	2.19	0.61	0.53	1.66	1.76	1.71	**3.85**	2.38	2.24

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

Highlighted values are maximums.

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2022 Emission Factors lb/hr[1]								2023 Emission Factors lb/hr[1]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
JD-210, Case 580 - Box Blades	ConstMin - Skid Steer Loaders	100	Diesel	0.00	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.00	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Small Loader/Backhoe (Cat 416-Cat 436)	ConstMin - Skid Steer Loaders	100	Diesel	0.00	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.00	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Cat 14 Grader	ConstMin - Graders	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	102.99	4.58	0.00	0.25	0.20	0.00	0.01	0.01	102.31	4.55
10-19 MT (SM EX 312 - 318)	ConstMin - Excavators	100	Diesel	0.00	0.24	0.07	0.00	0.00	0.00	36.00	1.60	0.00	0.24	0.07	0.00	0.00	0.00	36.00	1.60
20 TO 25 MT (CAT 320,321)	ConstMin - Excavators	175	Diesel	0.00	0.38	0.12	0.00	0.01	0.01	64.92	2.89	0.00	0.38	0.12	0.00	0.01	0.01	64.93	2.89
30 TO 35 MT (CAT 328,329)	ConstMin - Excavators	300	Diesel	0.00	0.21	0.20	0.00	0.01	0.01	97.25	4.32	0.00	0.20	0.20	0.00	0.01	0.01	97.21	4.32
40 - 48" Single Drum / Smooth / Vibro	ConstMin - Rollers	75	Diesel	0.00	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.00	0.36	0.05	0.00	0.00	0.00	30.95	1.38
78 - 84" Single Drum / Combo / Vibro	ConstMin - Rollers	75	Diesel	0.00	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.00	0.36	0.05	0.00	0.00	0.00	30.95	1.38
Walk Behind Roller (2-Drum) (RAMMEX)	ConstMin - Rollers	25	Diesel	*0.08*	*0.22*	*0.16*	*0.00*	*0.00*	*0.00*	*12.13*	*0.54*	0.08	0.23	0.16	0.00	0.00	0.00	12.13	0.54
Plate Compactor	OFF - ConstMin - Plate Compactors	25	Diesel	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20
Rough Terrain Crane 70-79 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 80-89 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 100-110 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Carry Deck Crane <15 Ton	ConstMin - Cranes	175	Diesel	0.00	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.00	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Carry Deck Crane >15 Ton	ConstMin - Cranes	175	Diesel	0.00	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.00	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Crane Hyd/C 130-150 Ton	ConstMin - Cranes	300	Diesel	0.00	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.00	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Crane Hyd/C 265 Ton	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
230-250 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.00	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.00	0.40	0.40	0.00	0.02	0.02	123.10	5.47
601- 800 Ton Lattice Crawler Crane	ConstMin - Cranes	750	Diesel	0.00	1.05	0.50	0.00	0.02	0.02	211.98	9.42	0.00	1.16	0.50	0.00	0.02	0.02	213.61	9.49
185 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
250 - 300 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
375 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
1600 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	600	Diesel	0.00	0.37	0.28	0.00	0.01	0.01	193.59	8.60	0.00	0.37	0.23	0.00	0.01	0.01	193.59	8.60
300 - 350 Amp Diesel Welder	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39
1 - 24 KW Generator	Portable Equipment - Rental Generator	50	Diesel	0.02	0.21	0.13	0.00	0.00	0.00	20.06	0.89	0.02	0.21	0.11	0.00	0.00	0.00	20.06	0.89
Portable Light Plant - Moon Glo's	OFF - Light Commercial - Generator Sets	25	Gasoline	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.71	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.70
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.00	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.00	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.00	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.00	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Cat IT28, 928, 930, 938 Loader	ConstMin - Rubber Tired Loaders	175	Diesel	0.00	0.40	0.12	0.00	0.01	0.01	63.02	2.80	0.00	0.39	0.12	0.00	0.01	0.01	62.95	2.80
Cat 966, JA744, WA500, L150 Loader	ConstMin - Rubber Tired Loaders	300	Diesel	0.00	0.21	0.20	0.00	0.01	0.01	87.61	3.89	0.00	0.20	0.20	0.00	0.01	0.01	87.53	3.89
Skid Steer-Wheeled	ConstMin - Skid Steer Loaders	100	Diesel	0.00	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.00	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Skid Steer - Track	ConstMin - Skid Steer Loaders	100	Diesel	0.00	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.00	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Rough Terrain Scissor Lift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
60' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
80' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
120' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
135' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
150' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
Forklift	ConstMin - Rough Terrain Forklifts	100	Diesel	0.00	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.00	0.27	0.07	0.00	0.00	0.00	45.11	2.00
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.00	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.00	0.33	0.12	0.00	0.01	0.01	58.83	2.61
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.00	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.00	0.33	0.12	0.00	0.01	0.01	58.83	2.61
6,000 - 8,000 lb Extendable	ConstMin - Rough Terrain Forklifts	75	Diesel	0.00	0.35	0.05	0.00	0.00	0.00	31.04	1.38	0.00	0.35	0.05	0.00	0.00	0.00	31.04	1.38
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.00	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.00	0.27	0.07	0.00	0.00	0.00	45.11	2.00
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.00	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.00	0.27	0.07	0.00	0.00	0.00	45.11	2.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	Industrial - Other General Industrial Equipment	75	Diesel	0.00	0.19	0.05	0.00	0.00	0.00	28.42	1.26	0.00	0.19	0.05	0.00	0.00	0.00	28.48	1.27
Fusion Machine >36" Ips	Industrial - Other General Industrial Equipment	175	Diesel	0.00	0.37	0.12	0.00	0.01	0.01	59.11	2.63	0.00	0.36	0.12	0.00	0.01	0.01	59.11	2.63

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used. Tier 4 equipment used when possible.*

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 2 Month 4	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		
Small Loader/Backhoe (Cat 416-Cat 436)	4	16	
Cat 14 Grader	4		
10-19 MT (SM EX 312 - 318)	4		
20 TO 25 MT (CAT 320,321)	4		
30 TO 35 MT (CAT 328,329)	4		
40 - 48" Single Drum / Smooth / Vibro	8		
78 - 84" Single Drum / Combo / Vibro	8		
Walk Behind Roller (2-Drum) (RAMMEX)	8		
Plate Compactor	8		
Rough Terrain Crane 70-79 Ton	4		
Rough Terrain Crane 80-89 Ton	4		
Rough Terrain Crane 90-99 Ton	4		2
Rough Terrain Crane 90-99 Ton	4		
Rough Terrain Crane 100-110 Ton	4		
Carry Deck Crane <15 Ton	4		
Carry Deck Crane >15 Ton	4		
Crane Hyd/C 130-150 Ton	4	2	
Crane Hyd/C 265 Ton	4	2	
175-225 Ton Lattice Crawler Crane	4		
175-225 Ton Lattice Crawler Crane	4		
175-225 Ton Lattice Crawler Crane	4		
230-250 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
601- 800 Ton Lattice Crawler Crane	4		
185 CFM Air Compressor - Diesel	8	4	2
250 - 300 CFM Air Compressor - Diesel	8		
375 CFM Air Compressor - Diesel	8	5	
1600 CFM Air Compressor - Diesel	8		
300 - 350 Amp Diesel Welder	8	4	4
1 - 24 KW Generator	8	2	2
Portable Light Plant - Moon Glo's	8	10	
Road Broom	4	3	
Road Broom	4		
Cat IT28, 928, 930, 938 Loader	4		
Cat 966, JA744, WA500, L150 Loader	4	1	
Skid Steer-Wheeled	4		
Skid Steer - Track	4	4	
Rough Terrain Scissor Lift	4	10	
40' Manlift	4		1
40' Manlift	4	8	
60' Manlift	4	2	
80' Manlift	4		
120' Manlift	4		
135' Manlift	4		
150' Manlift	4		
Forklift	4		
30,000 lb and Greater Straight Mast	4		
30,000 lb and Greater Straight Mast	4		
6,000 - 8,000 lb Extendable	4		
9,000 - 10,000 lb Extendable	4		1
9,000 - 10,000 lb Extendable	4		2
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	4		
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	4		
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	4		
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	4		
Fusion Machine >36" Ips	4		

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
VOC (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.000	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.000	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.000	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	0.00
Plate Compactor	0.004	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.000	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.000	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.000	0.00	0.00
Crane Hyd/C 265 Ton	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.000	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.20	0.10
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.00
375 CFM Air Compressor - Diesel	0.006	0.24	0.00
1600 CFM Air Compressor - Diesel	0.000	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.29	0.29
1 - 24 KW Generator	0.017	0.28	0.28
Portable Light Plant - Moon Glo's	0.070	5.59	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.000	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.000	0.00	0.00
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.005	0.20	0.00
40' Manlift	0.005	0.00	0.02
40' Manlift	0.005	0.16	0.00
60' Manlift	0.005	0.04	0.00
80' Manlift	0.005	0.00	0.00
120' Manlift	0.005	0.00	0.00
135' Manlift	0.005	0.00	0.00
150' Manlift	0.005	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.000	0.00	0.00
Total		7.00	0.69

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.210	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	13.42	0.00
Cat 14 Grader	0.254	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.239	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.378	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.205	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.365	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	0.00
Plate Compactor	0.026	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.253	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.253	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.253	0.00	2.02
Rough Terrain Crane 90-99 Ton	0.253	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.253	0.00	0.00
Carry Deck Crane <15 Ton	0.323	0.00	0.00
Carry Deck Crane >15 Ton	0.323	0.00	0.00
Crane Hyd/C 130-150 Ton	0.253	2.02	0.00
Crane Hyd/C 265 Ton	0.443	3.54	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	3.72	1.86
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	0.00
375 CFM Air Compressor - Diesel	0.116	4.65	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	1.38	1.38
1 - 24 KW Generator	0.206	3.30	3.30
Portable Light Plant - Moon Glo's	0.226	18.08	0.00
Road Broom	0.280	3.36	0.00
Road Broom	0.280	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.395	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.205	0.82	0.00
Skid Steer-Wheeled	0.210	0.00	0.00
Skid Steer - Track	0.210	3.35	0.00
Rough Terrain Scissor Lift	0.097	3.90	0.00
40' Manlift	0.097	0.00	0.39
40' Manlift	0.097	3.12	0.00
60' Manlift	0.097	0.78	0.00
80' Manlift	0.097	0.00	0.00
120' Manlift	0.097	0.00	0.00
135' Manlift	0.097	0.00	0.00
150' Manlift	0.097	0.00	0.00
Forklift	0.274	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	0.00
6,000 - 8,000 lb Extendable	0.348	0.00	0.00
9,000 - 10,000 lb Extendable	0.274	0.00	1.10
9,000 - 10,000 lb Extendable	0.274	0.00	2.19
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	0.00	0.00
Fusion Machine >36" Ips	0.365	0.00	0.00
Total		65.44	12.24

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
NOX (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	4.23	0.00
Cat 14 Grader	0.198	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.116	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	0.00
Plate Compactor	0.031	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.198	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.59
Rough Terrain Crane 90-99 Ton	0.198	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.00
Carry Deck Crane <15 Ton	0.116	0.00	0.00
Carry Deck Crane >15 Ton	0.116	0.00	0.00
Crane Hyd/C 130-150 Ton	0.198	1.59	0.00
Crane Hyd/C 265 Ton	0.397	3.17	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	2.93	1.46
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.00
375 CFM Air Compressor - Diesel	0.092	3.66	0.00
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	2.15	2.15
1 - 24 KW Generator	0.126	2.02	2.02
Portable Light Plant - Moon Glo's	0.054	4.30	0.00
Road Broom	0.050	0.60	0.00
Road Broom	0.050	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.198	0.79	0.00
Skid Steer-Wheeled	0.066	0.00	0.00
Skid Steer - Track	0.066	1.06	0.00
Rough Terrain Scissor Lift	0.091	3.64	0.00
40' Manlift	0.091	0.00	0.36
40' Manlift	0.091	2.91	0.00
60' Manlift	0.091	0.73	0.00
80' Manlift	0.091	0.00	0.00
120' Manlift	0.091	0.00	0.00
135' Manlift	0.091	0.00	0.00
150' Manlift	0.091	0.00	0.00
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.00
6,000 - 8,000 lb Extendable	0.050	0.00	0.00
9,000 - 10,000 lb Extendable	0.066	0.00	0.26
9,000 - 10,000 lb Extendable	0.066	0.00	0.53
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00
Fusion Machine >36" Ips	0.116	0.00	0.00
Total		33.79	8.38

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
SOx (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.02	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.01	0.00
Crane Hyd/C 265 Ton	0.001	0.01	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.01	0.00
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.01	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.00	0.00
1 - 24 KW Generator	0.000	0.00	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.00	0.00
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.000	0.01	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.00
60' Manlift	0.000	0.00	0.00
80' Manlift	0.000	0.00	0.00
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.09	0.02

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM10 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.21	0.00
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.00
Plate Compactor	0.001	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.00
Carry Deck Crane <15 Ton	0.006	0.00	0.00
Carry Deck Crane >15 Ton	0.006	0.00	0.00
Crane Hyd/C 130-150 Ton	0.010	0.08	0.00
Crane Hyd/C 265 Ton	0.020	0.16	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.04	0.02
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.00
375 CFM Air Compressor - Diesel	0.001	0.06	0.00
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.04	0.04
1 - 24 KW Generator	0.002	0.04	0.04
Portable Light Plant - Moon Glo's	0.001	0.10	0.00
Road Broom	0.002	0.03	0.00
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.00
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.05	0.00
Rough Terrain Scissor Lift	0.001	0.03	0.00
40' Manlift	0.001	0.00	0.00
40' Manlift	0.001	0.02	0.00
60' Manlift	0.001	0.01	0.00
80' Manlift	0.001	0.00	0.00
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.01
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.91	0.22

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM2.5 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.21	0.00
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.00
Plate Compactor	0.001	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.00
Carry Deck Crane <15 Ton	0.006	0.00	0.00
Carry Deck Crane >15 Ton	0.006	0.00	0.00
Crane Hyd/C 130-150 Ton	0.010	0.08	0.00
Crane Hyd/C 265 Ton	0.020	0.16	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.04	0.02
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.00
375 CFM Air Compressor - Diesel	0.001	0.05	0.00
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.04	0.04
1 - 24 KW Generator	0.002	0.04	0.04
Portable Light Plant - Moon Glo's	0.001	0.10	0.00
Road Broom	0.002	0.03	0.00
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.04	0.00
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.05	0.00
Rough Terrain Scissor Lift	0.001	0.03	0.00
40' Manlift	0.001	0.00	0.00
40' Manlift	0.001	0.02	0.00
60' Manlift	0.001	0.01	0.00
80' Manlift	0.001	0.00	0.00
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.01
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.89	0.22

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO2 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	32.123	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	2055.87	0.00
Cat 14 Grader	102.992	0.00	0.00
10-19 MT (SM EX 312 - 318)	35.999	0.00	0.00
20 TO 25 MT (CAT 320,321)	64.917	0.00	0.00
30 TO 35 MT (CAT 328,329)	97.247	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.474	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	0.00
Plate Compactor	4.310	0.00	0.00
Rough Terrain Crane 70-79 Ton	73.881	0.00	0.00
Rough Terrain Crane 80-89 Ton	73.881	0.00	0.00
Rough Terrain Crane 90-99 Ton	73.881	0.00	591.05
Rough Terrain Crane 90-99 Ton	73.881	0.00	0.00
Rough Terrain Crane 100-110 Ton	73.881	0.00	0.00
Carry Deck Crane <15 Ton	49.104	0.00	0.00
Carry Deck Crane >15 Ton	49.104	0.00	0.00
Crane Hyd/C 130-150 Ton	73.881	591.05	0.00
Crane Hyd/C 265 Ton	122.974	983.79	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	629.06	314.53
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	0.00
375 CFM Air Compressor - Diesel	19.658	786.32	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	274.48	274.48
1 - 24 KW Generator	20.059	320.95	320.95
Portable Light Plant - Moon Glo's	6.906	552.44	0.00
Road Broom	38.704	464.44	0.00
Road Broom	38.704	0.00	0.00
Cat IT28, 928, 930, 938 Loader	63.020	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	87.614	350.45	0.00
Skid Steer-Wheeled	32.123	0.00	0.00
Skid Steer - Track	32.123	513.97	0.00
Rough Terrain Scissor Lift	18.396	735.84	0.00
40' Manlift	18.396	0.00	73.58
40' Manlift	18.396	588.67	0.00
60' Manlift	18.396	147.17	0.00
80' Manlift	18.396	0.00	0.00
120' Manlift	18.396	0.00	0.00
135' Manlift	18.396	0.00	0.00
150' Manlift	18.396	0.00	0.00
Forklift	45.074	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	0.00
6,000 - 8,000 lb Extendable	31.041	0.00	0.00
9,000 - 10,000 lb Extendable	45.074	0.00	180.30
9,000 - 10,000 lb Extendable	45.074	0.00	360.59
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.423	0.00	0.00
Fusion Machine >36" Ips	59.106	0.00	0.00
Total		8994.50	2115.48

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Month	
Fuel (gal/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	1.428	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	91.37	0.00
Cat 14 Grader	4.577	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	0.00	0.00
20 TO 25 MT (CAT 320,321)	2.885	0.00	0.00
30 TO 35 MT (CAT 328,329)	4.322	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.354	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	0.00
Plate Compactor	0.197	0.00	0.00
Rough Terrain Crane 70-79 Ton	3.284	0.00	0.00
Rough Terrain Crane 80-89 Ton	3.284	0.00	0.00
Rough Terrain Crane 90-99 Ton	3.284	0.00	26.27
Rough Terrain Crane 90-99 Ton	3.284	0.00	0.00
Rough Terrain Crane 100-110 Ton	3.284	0.00	0.00
Carry Deck Crane <15 Ton	2.182	0.00	0.00
Carry Deck Crane >15 Ton	2.182	0.00	0.00
Crane Hyd/C 130-150 Ton	3.284	26.27	0.00
Crane Hyd/C 265 Ton	5.465	43.72	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	27.96	13.98
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	0.00
375 CFM Air Compressor - Diesel	0.874	34.95	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	12.52	12.52
1 - 24 KW Generator	0.892	14.26	14.26
Portable Light Plant - Moon Glo's	0.705	56.41	0.00
Road Broom	1.720	20.64	0.00
Road Broom	1.720	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.801	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	3.894	15.58	0.00
Skid Steer-Wheeled	1.428	0.00	0.00
Skid Steer - Track	1.428	22.84	0.00
Rough Terrain Scissor Lift	0.818	32.70	0.00
40' Manlift	0.818	0.00	3.27
40' Manlift	0.818	26.16	0.00
60' Manlift	0.818	6.54	0.00
80' Manlift	0.818	0.00	0.00
120' Manlift	0.818	0.00	0.00
135' Manlift	0.818	0.00	0.00
150' Manlift	0.818	0.00	0.00
Forklift	2.003	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	0.00
6,000 - 8,000 lb Extendable	1.380	0.00	0.00
9,000 - 10,000 lb Extendable	2.003	0.00	8.01
9,000 - 10,000 lb Extendable	2.003	0.00	16.03
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	0.00	0.00
Fusion Machine >36" Ips	2.627	0.00	0.00
Total		431.92	94.34

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 3 Month 3	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		
Small Loader/Backhoe (Cat 416-Cat 436)	4	3	2
Cat 14 Grader	4		
10-19 MT (SM EX 312 - 318)	4		2
20 TO 25 MT (CAT 320,321)	4		3
30 TO 35 MT (CAT 328,329)	4		
40 - 48" Single Drum / Smooth / Vibro	8		2
78 - 84" Single Drum / Combo / Vibro	8		
Walk Behind Roller (2-Drum) (RAMMEX)	8		3
Plate Compactor	8		1
Rough Terrain Crane 70-79 Ton	4		1
Rough Terrain Crane 80-89 Ton	4		2
Rough Terrain Crane 90-99 Ton	4		2
Rough Terrain Crane 90-99 Ton	4		2
Rough Terrain Crane 100-110 Ton	4		1
Carry Deck Crane <15 Ton	4		1
Carry Deck Crane >15 Ton	4		1
Crane Hyd/C 130-150 Ton	4		1
Crane Hyd/C 265 Ton	4		1
175-225 Ton Lattice Crawler Crane	4		1
175-225 Ton Lattice Crawler Crane	4		
175-225 Ton Lattice Crawler Crane	4		
230-250 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		1
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		1
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
601- 800 Ton Lattice Crawler Crane	4		
185 CFM Air Compressor - Diesel	8		4
250 - 300 CFM Air Compressor - Diesel	8		1
375 CFM Air Compressor - Diesel	8		
1600 CFM Air Compressor - Diesel	8		
300 - 350 Amp Diesel Welder	8		5
1 - 24 KW Generator	8	4	2
Portable Light Plant - Moon Glo's	8	12	5
Road Broom	4		1
Road Broom	4		
Cat IT28, 928, 930, 938 Loader	4		1
Cat 966, JA744, WA500, L150 Loader	4	2	2
Skid Steer-Wheeled	4		
Skid Steer - Track	4	3	4
Rough Terrain Scissor Lift	4	2	
40' Manlift	4		2
40' Manlift	4	8	6
60' Manlift	4		6
80' Manlift	4		4
120' Manlift	4		
135' Manlift	4		
150' Manlift	4		
Forklift	4		
30,000 lb and Greater Straight Mast	4		1
30,000 lb and Greater Straight Mast	4		
6,000 - 8,000 lb Extendable	4		1
9,000 - 10,000 lb Extendable	4		2
9,000 - 10,000 lb Extendable	4		6
Fusion Mach 2"lps-8"Dips (Tracstar 28)	4		2
Fusion Mach 4"lps-12"Dips (Tracstar 412)	4		2
Fusion Mach 6"lps-18"Dips (Tracstar 618)	4		2
Fusion Mach 12"lps-36"Dips(Tracstar 900)	4		1
Fusion Machine >36" lps	4		1

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
VOC (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.000	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.000	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.000	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	1.95
Plate Compactor	0.004	0.00	0.03
Rough Terrain Crane 70-79 Ton	0.000	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.000	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.000	0.00	0.00
Crane Hyd/C 265 Ton	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.000	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.00	0.20
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.05
375 CFM Air Compressor - Diesel	0.006	0.00	0.00
1600 CFM Air Compressor - Diesel	0.000	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.00	0.36
1 - 24 KW Generator	0.017	0.55	0.28
Portable Light Plant - Moon Glo's	0.070	6.70	2.79
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.000	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.000	0.00	0.00
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.005	0.04	0.00
40' Manlift	0.005	0.00	0.04
40' Manlift	0.005	0.16	0.12
60' Manlift	0.005	0.00	0.12
80' Manlift	0.005	0.00	0.08
120' Manlift	0.005	0.00	0.00
135' Manlift	0.005	0.00	0.00
150' Manlift	0.005	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.61
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.61
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.61
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.000	0.00	0.00
Total		7.46	7.86

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.210	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	2.52	1.68
Cat 14 Grader	0.254	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.239	0.00	1.91
20 TO 25 MT (CAT 320,321)	0.378	0.00	4.54
30 TO 35 MT (CAT 328,329)	0.205	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.365	0.00	5.83
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	5.37
Plate Compactor	0.026	0.00	0.21
Rough Terrain Crane 70-79 Ton	0.253	0.00	1.01
Rough Terrain Crane 80-89 Ton	0.253	0.00	2.02
Rough Terrain Crane 90-99 Ton	0.253	0.00	2.02
Rough Terrain Crane 90-99 Ton	0.253	0.00	2.02
Rough Terrain Crane 100-110 Ton	0.253	0.00	1.01
Carry Deck Crane <15 Ton	0.323	0.00	1.29
Carry Deck Crane >15 Ton	0.323	0.00	1.29
Crane Hyd/C 130-150 Ton	0.253	0.00	1.01
Crane Hyd/C 265 Ton	0.443	0.00	1.77
175-225 Ton Lattice Crawler Crane	0.443	0.00	1.77
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	1.77
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	1.77
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	0.00	3.72
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	0.93
375 CFM Air Compressor - Diesel	0.116	0.00	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	0.00	1.72
1 - 24 KW Generator	0.206	6.60	3.30
Portable Light Plant - Moon Glo's	0.226	21.69	9.04
Road Broom	0.280	0.00	1.12
Road Broom	0.280	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.395	0.00	1.58
Cat 966, JA744, WA500, L150 Loader	0.205	1.64	1.64
Skid Steer-Wheeled	0.210	0.00	0.00
Skid Steer - Track	0.210	2.52	3.35
Rough Terrain Scissor Lift	0.097	0.78	0.00
40' Manlift	0.097	0.00	0.78
40' Manlift	0.097	3.12	2.34
60' Manlift	0.097	0.00	2.34
80' Manlift	0.097	0.00	1.56
120' Manlift	0.097	0.00	0.00
135' Manlift	0.097	0.00	0.00
150' Manlift	0.097	0.00	0.00
Forklift	0.274	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	1.33
30,000 lb and Greater Straight Mast	0.334	0.00	0.00
6,000 - 8,000 lb Extendable	0.348	0.00	1.39
9,000 - 10,000 lb Extendable	0.274	0.00	2.19
9,000 - 10,000 lb Extendable	0.274	0.00	6.58
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	1.68
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	1.68
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	1.68
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	0.00	0.77
Fusion Machine >36" Ips	0.365	0.00	1.46
Total		38.86	90.50

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
NOX (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.79	0.53
Cat 14 Grader	0.198	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.53
20 TO 25 MT (CAT 320,321)	0.116	0.00	1.39
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.79
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	3.78
Plate Compactor	0.031	0.00	0.25
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.79
Rough Terrain Crane 80-89 Ton	0.198	0.00	1.59
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.59
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.59
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.79
Carry Deck Crane <15 Ton	0.116	0.00	0.46
Carry Deck Crane >15 Ton	0.116	0.00	0.46
Crane Hyd/C 130-150 Ton	0.198	0.00	0.79
Crane Hyd/C 265 Ton	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	0.00	2.93
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.73
375 CFM Air Compressor - Diesel	0.092	0.00	0.00
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	0.00	2.69
1 - 24 KW Generator	0.126	4.04	2.02
Portable Light Plant - Moon Glo's	0.054	5.16	2.15
Road Broom	0.050	0.00	0.20
Road Broom	0.050	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.46
Cat 966, JA744, WA500, L150 Loader	0.198	1.59	1.59
Skid Steer-Wheeled	0.066	0.00	0.00
Skid Steer - Track	0.066	0.79	1.06
Rough Terrain Scissor Lift	0.091	0.73	0.00
40' Manlift	0.091	0.00	0.73
40' Manlift	0.091	2.91	2.19
60' Manlift	0.091	0.00	2.19
80' Manlift	0.091	0.00	1.46
120' Manlift	0.091	0.00	0.00
135' Manlift	0.091	0.00	0.00
150' Manlift	0.091	0.00	0.00
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.46
30,000 lb and Greater Straight Mast	0.116	0.00	0.00
6,000 - 8,000 lb Extendable	0.050	0.00	0.20
9,000 - 10,000 lb Extendable	0.066	0.00	0.53
9,000 - 10,000 lb Extendable	0.066	0.00	1.59
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	1.16
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	1.16
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	1.16
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.20
Fusion Machine >36" Ips	0.116	0.00	0.46
Total		16.02	48.99

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
SOx (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.01
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00
Crane Hyd/C 265 Ton	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.00	0.00
1 - 24 KW Generator	0.000	0.01	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.01
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.000	0.00	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.00
60' Manlift	0.000	0.00	0.00
80' Manlift	0.000	0.00	0.00
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.04	0.14

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM10 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.04	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.03
Plate Compactor	0.001	0.00	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.04
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.04
Carry Deck Crane <15 Ton	0.006	0.00	0.02
Carry Deck Crane >15 Ton	0.006	0.00	0.02
Crane Hyd/C 130-150 Ton	0.010	0.00	0.04
Crane Hyd/C 265 Ton	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.04
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.05
1 - 24 KW Generator	0.002	0.08	0.04
Portable Light Plant - Moon Glo's	0.001	0.12	0.05
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.02
Cat 966, JA744, WA500, L150 Loader	0.010	0.08	0.08
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.04	0.05
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.02	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.01
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.08
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.01
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.01
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.01
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.01
Fusion Machine >36" Ips	0.006	0.00	0.02
Total		0.38	1.53

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM2.5 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.04	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.03
Plate Compactor	0.001	0.00	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.04
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.04
Carry Deck Crane <15 Ton	0.006	0.00	0.02
Carry Deck Crane >15 Ton	0.006	0.00	0.02
Crane Hyd/C 130-150 Ton	0.010	0.00	0.04
Crane Hyd/C 265 Ton	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.04
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.05
1 - 24 KW Generator	0.002	0.08	0.04
Portable Light Plant - Moon Glo's	0.001	0.12	0.05
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.02
Cat 966, JA744, WA500, L150 Loader	0.010	0.08	0.08
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.04	0.05
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.02	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.01
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.08
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.01
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.01
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.01
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.01
Fusion Machine >36" Ips	0.006	0.00	0.02
Total		0.38	1.52

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO2 (lb/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	32.123	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	385.47	256.98
Cat 14 Grader	102.992	0.00	0.00
10-19 MT (SM EX 312 - 318)	35.999	0.00	287.99
20 TO 25 MT (CAT 320,321)	64.917	0.00	779.01
30 TO 35 MT (CAT 328,329)	97.247	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.474	0.00	487.58
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	291.07
Plate Compactor	4.310	0.00	34.48
Rough Terrain Crane 70-79 Ton	73.881	0.00	295.52
Rough Terrain Crane 80-89 Ton	73.881	0.00	591.05
Rough Terrain Crane 90-99 Ton	73.881	0.00	591.05
Rough Terrain Crane 90-99 Ton	73.881	0.00	591.05
Rough Terrain Crane 100-110 Ton	73.881	0.00	295.52
Carry Deck Crane <15 Ton	49.104	0.00	196.42
Carry Deck Crane >15 Ton	49.104	0.00	196.42
Crane Hyd/C 130-150 Ton	73.881	0.00	295.52
Crane Hyd/C 265 Ton	122.974	0.00	491.89
175-225 Ton Lattice Crawler Crane	122.974	0.00	491.89
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	491.89
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	491.89
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	0.00	629.06
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	157.26
375 CFM Air Compressor - Diesel	19.658	0.00	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	0.00	343.11
1 - 24 KW Generator	20.059	641.89	320.95
Portable Light Plant - Moon Glo's	6.906	662.93	276.22
Road Broom	38.704	0.00	154.81
Road Broom	38.704	0.00	0.00
Cat IT28, 928, 930, 938 Loader	63.020	0.00	252.08
Cat 966, JA744, WA500, L150 Loader	87.614	700.91	700.91
Skid Steer-Wheeled	32.123	0.00	0.00
Skid Steer - Track	32.123	385.47	513.97
Rough Terrain Scissor Lift	18.396	147.17	0.00
40' Manlift	18.396	0.00	147.17
40' Manlift	18.396	588.67	441.51
60' Manlift	18.396	0.00	441.51
80' Manlift	18.396	0.00	294.34
120' Manlift	18.396	0.00	0.00
135' Manlift	18.396	0.00	0.00
150' Manlift	18.396	0.00	0.00
Forklift	45.074	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	234.57
30,000 lb and Greater Straight Mast	58.643	0.00	0.00
6,000 - 8,000 lb Extendable	31.041	0.00	124.17
9,000 - 10,000 lb Extendable	45.074	0.00	360.59
9,000 - 10,000 lb Extendable	45.074	0.00	1081.78
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	88.44
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	88.44
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	88.44
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.423	0.00	113.69
Fusion Machine >36" Ips	59.106	0.00	236.42
Total		3512.53	14246.67

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Month	
Fuel (gal/day)	**2022**	**1**	**2**
JD-210, Case 580 - Box Blades	1.428	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	17.13	11.42
Cat 14 Grader	4.577	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	0.00	12.80
20 TO 25 MT (CAT 320,321)	2.885	0.00	34.62
30 TO 35 MT (CAT 328,329)	4.322	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.354	0.00	21.67
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	12.94
Plate Compactor	0.197	0.00	1.57
Rough Terrain Crane 70-79 Ton	3.284	0.00	13.13
Rough Terrain Crane 80-89 Ton	3.284	0.00	26.27
Rough Terrain Crane 90-99 Ton	3.284	0.00	26.27
Rough Terrain Crane 90-99 Ton	3.284	0.00	26.27
Rough Terrain Crane 100-110 Ton	3.284	0.00	13.13
Carry Deck Crane <15 Ton	2.182	0.00	8.73
Carry Deck Crane >15 Ton	2.182	0.00	8.73
Crane Hyd/C 130-150 Ton	3.284	0.00	13.13
Crane Hyd/C 265 Ton	5.465	0.00	21.86
175-225 Ton Lattice Crawler Crane	5.465	0.00	21.86
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	21.86
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	21.86
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	0.00	27.96
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	6.99
375 CFM Air Compressor - Diesel	0.874	0.00	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	0.00	15.65
1 - 24 KW Generator	0.892	28.53	14.26
Portable Light Plant - Moon Glo's	0.705	67.69	28.20
Road Broom	1.720	0.00	6.88
Road Broom	1.720	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.801	0.00	11.20
Cat 966, JA744, WA500, L150 Loader	3.894	31.15	31.15
Skid Steer-Wheeled	1.428	0.00	0.00
Skid Steer - Track	1.428	17.13	22.84
Rough Terrain Scissor Lift	0.818	6.54	0.00
40' Manlift	0.818	0.00	6.54
40' Manlift	0.818	26.16	19.62
60' Manlift	0.818	0.00	19.62
80' Manlift	0.818	0.00	13.08
120' Manlift	0.818	0.00	0.00
135' Manlift	0.818	0.00	0.00
150' Manlift	0.818	0.00	0.00
Forklift	2.003	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	10.43
30,000 lb and Greater Straight Mast	2.606	0.00	0.00
6,000 - 8,000 lb Extendable	1.380	0.00	5.52
9,000 - 10,000 lb Extendable	2.003	0.00	16.03
9,000 - 10,000 lb Extendable	2.003	0.00	48.08
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	3.93
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	3.93
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	3.93
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	0.00	5.05
Fusion Machine >36" Ips	2.627	0.00	10.51
Total		194.33	649.55

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 3 Month 4	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		
Small Loader/Backhoe (Cat 416-Cat 436)	4	3	2
Cat 14 Grader	4		
10-19 MT (SM EX 312 - 318)	4		2
20 TO 25 MT (CAT 320,321)	4		3
30 TO 35 MT (CAT 328,329)	4		
40 - 48" Single Drum / Smooth / Vibro	8		2
78 - 84" Single Drum / Combo / Vibro	8		
Walk Behind Roller (2-Drum) (RAMMEX)	8		2
Plate Compactor	8		4
Rough Terrain Crane 70-79 Ton	4		1
Rough Terrain Crane 80-89 Ton	4		2
Rough Terrain Crane 90-99 Ton	4		2
Rough Terrain Crane 90-99 Ton	4		2
Rough Terrain Crane 100-110 Ton	4		1
Carry Deck Crane <15 Ton	4		1
Carry Deck Crane >15 Ton	4		1
Crane Hyd/C 130-150 Ton	4		1
Crane Hyd/C 265 Ton	4		1
175-225 Ton Lattice Crawler Crane	4		1
175-225 Ton Lattice Crawler Crane	4		
175-225 Ton Lattice Crawler Crane	4		
230-250 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		1
300-330 Ton Lattice Crawler Crane	4		1
300-330 Ton Lattice Crawler Crane	4		1
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
300-330 Ton Lattice Crawler Crane	4		
601- 800 Ton Lattice Crawler Crane	4		
185 CFM Air Compressor - Diesel	8		4
250 - 300 CFM Air Compressor - Diesel	8		1
375 CFM Air Compressor - Diesel	8		
1600 CFM Air Compressor - Diesel	8		
300 - 350 Amp Diesel Welder	8		5
1 - 24 KW Generator	8	4	2
Portable Light Plant - Moon Glo's	8	12	
Road Broom	4		1
Road Broom	4		
Cat IT28, 928, 930, 938 Loader	4		1
Cat 966, JA744, WA500, L150 Loader	4	2	2
Skid Steer-Wheeled	4		
Skid Steer - Track	4	3	4
Rough Terrain Scissor Lift	4	2	
40' Manlift	4		2
40' Manlift	4	8	6
60' Manlift	4		6
80' Manlift	4		4
120' Manlift	4		1
135' Manlift	4		1
150' Manlift	4		1
Forklift	4		
30,000 lb and Greater Straight Mast	4		1
30,000 lb and Greater Straight Mast	4		1
6,000 - 8,000 lb Extendable	4		2
9,000 - 10,000 lb Extendable	4		2
9,000 - 10,000 lb Extendable	4		6
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	4		
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	4		
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	4		
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	4		
Fusion Machine >36" Ips	4		

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
VOC (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.000	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.000	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.000	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.083	0.00	1.33
Plate Compactor	0.004	0.00	0.13
Rough Terrain Crane 70-79 Ton	0.000	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.000	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.000	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.000	0.00	0.00
Crane Hyd/C 265 Ton	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.000	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.000	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.000	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.00	0.20
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.05
375 CFM Air Compressor - Diesel	0.006	0.00	0.00
1600 CFM Air Compressor - Diesel	0.000	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.00	0.36
1 - 24 KW Generator	0.017	0.55	0.28
Portable Light Plant - Moon Glo's	0.069	6.63	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.000	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.000	0.00	0.00
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.005	0.04	0.00
40' Manlift	0.005	0.00	0.04
40' Manlift	0.005	0.16	0.12
60' Manlift	0.005	0.00	0.12
80' Manlift	0.005	0.00	0.08
120' Manlift	0.005	0.00	0.02
135' Manlift	0.005	0.00	0.02
150' Manlift	0.005	0.00	0.02
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.000	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.000	0.00	0.00
Total		7.39	2.77

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.400	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.400	4.80	3.20
Cat 14 Grader	0.249	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.237	0.00	1.90
20 TO 25 MT (CAT 320,321)	0.379	0.00	4.54
30 TO 35 MT (CAT 328,329)	0.204	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.359	0.00	5.74
78 - 84" Single Drum / Combo / Vibro	0.359	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.226	0.00	3.62
Plate Compactor	0.026	0.00	0.84
Rough Terrain Crane 70-79 Ton	0.252	0.00	1.01
Rough Terrain Crane 80-89 Ton	0.252	0.00	2.02
Rough Terrain Crane 90-99 Ton	0.252	0.00	2.02
Rough Terrain Crane 90-99 Ton	0.252	0.00	2.02
Rough Terrain Crane 100-110 Ton	0.252	0.00	1.01
Carry Deck Crane <15 Ton	0.319	0.00	1.28
Carry Deck Crane >15 Ton	0.319	0.00	1.28
Crane Hyd/C 130-150 Ton	0.252	0.00	1.01
Crane Hyd/C 265 Ton	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.164	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	0.00	3.72
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	0.93
375 CFM Air Compressor - Diesel	0.116	0.00	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	0.00	1.71
1 - 24 KW Generator	0.206	6.60	3.30
Portable Light Plant - Moon Glo's	0.226	21.69	0.00
Road Broom	0.307	0.00	1.23
Road Broom	0.307	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.394	0.00	1.58
Cat 966, JA744, WA500, L150 Loader	0.199	1.59	1.59
Skid Steer-Wheeled	0.400	0.00	0.00
Skid Steer - Track	0.400	4.80	6.40
Rough Terrain Scissor Lift	0.098	0.78	0.00
40' Manlift	0.098	0.00	0.78
40' Manlift	0.098	3.13	2.35
60' Manlift	0.098	0.00	2.35
80' Manlift	0.098	0.00	1.56
120' Manlift	0.098	0.00	0.39
135' Manlift	0.098	0.00	0.39
150' Manlift	0.098	0.00	0.39
Forklift	0.275	0.00	0.00
30,000 lb and Greater Straight Mast	0.332	0.00	1.33
30,000 lb and Greater Straight Mast	0.332	0.00	1.33
6,000 - 8,000 lb Extendable	0.349	0.00	2.80
9,000 - 10,000 lb Extendable	0.275	0.00	2.20
9,000 - 10,000 lb Extendable	0.275	0.00	6.59
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.194	0.00	0.00
Fusion Machine >36" Ips	0.359	0.00	0.00
Total		43.39	82.34

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
NOX (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.79	0.53
Cat 14 Grader	0.198	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.53
20 TO 25 MT (CAT 320,321)	0.116	0.00	1.39
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.79
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.158	0.00	2.53
Plate Compactor	0.031	0.00	1.01
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.79
Rough Terrain Crane 80-89 Ton	0.198	0.00	1.59
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.59
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.59
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.79
Carry Deck Crane <15 Ton	0.116	0.00	0.46
Carry Deck Crane >15 Ton	0.116	0.00	0.46
Crane Hyd/C 130-150 Ton	0.198	0.00	0.79
Crane Hyd/C 265 Ton	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.59
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.59
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	0.00	2.93
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.73
375 CFM Air Compressor - Diesel	0.092	0.00	0.00
1600 CFM Air Compressor - Diesel	0.227	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	0.00	2.67
1 - 24 KW Generator	0.110	3.54	1.77
Portable Light Plant - Moon Glo's	0.054	5.15	0.00
Road Broom	0.050	0.00	0.20
Road Broom	0.050	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.46
Cat 966, JA744, WA500, L150 Loader	0.198	1.59	1.59
Skid Steer-Wheeled	0.066	0.00	0.00
Skid Steer - Track	0.066	0.79	1.06
Rough Terrain Scissor Lift	0.091	0.73	0.00
40' Manlift	0.091	0.00	0.73
40' Manlift	0.091	2.90	2.18
60' Manlift	0.091	0.00	2.18
80' Manlift	0.091	0.00	1.45
120' Manlift	0.091	0.00	0.36
135' Manlift	0.091	0.00	0.36
150' Manlift	0.091	0.00	0.36
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.46
30,000 lb and Greater Straight Mast	0.116	0.00	0.46
6,000 - 8,000 lb Extendable	0.050	0.00	0.40
9,000 - 10,000 lb Extendable	0.066	0.00	0.53
9,000 - 10,000 lb Extendable	0.066	0.00	1.59
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00
Fusion Machine >36" Ips	0.116	0.00	0.00
Total		15.49	45.25

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
SOx (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.01
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00
Crane Hyd/C 265 Ton	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.00	0.00
1 - 24 KW Generator	0.000	0.01	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.01
Rough Terrain Scissor Lift	0.000	0.00	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.00
60' Manlift	0.000	0.00	0.00
80' Manlift	0.000	0.00	0.00
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.05	0.14

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM10 (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.04	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.007	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.02
Plate Compactor	0.001	0.00	0.04
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.04
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.04
Carry Deck Crane <15 Ton	0.006	0.00	0.02
Carry Deck Crane >15 Ton	0.006	0.00	0.02
Crane Hyd/C 130-150 Ton	0.010	0.00	0.04
Crane Hyd/C 265 Ton	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.04
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.009	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.05
1 - 24 KW Generator	0.001	0.02	0.01
Portable Light Plant - Moon Glo's	0.001	0.12	0.00
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.02
Cat 966, JA744, WA500, L150 Loader	0.010	0.08	0.08
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.04	0.05
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.02	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.08
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.33	1.53

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
PM2.5 (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.04	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.007	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.02
Plate Compactor	0.001	0.00	0.04
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.04
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.08
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.04
Carry Deck Crane <15 Ton	0.006	0.00	0.02
Carry Deck Crane >15 Ton	0.006	0.00	0.02
Crane Hyd/C 130-150 Ton	0.010	0.00	0.04
Crane Hyd/C 265 Ton	0.019	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.019	0.00	0.08
175-225 Ton Lattice Crawler Crane	0.019	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.019	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.019	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.08
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.019	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.04
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.009	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.05
1 - 24 KW Generator	0.001	0.02	0.01
Portable Light Plant - Moon Glo's	0.001	0.12	0.00
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.02
Cat 966, JA744, WA500, L150 Loader	0.010	0.08	0.08
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.04	0.05
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.02	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
30,000 lb and Greater Straight Mast	0.006	0.00	0.02
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.08
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.32	1.51

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Month	
CO2 (lb/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	36.319	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	36.319	435.83	290.55
Cat 14 Grader	102.308	0.00	0.00
10-19 MT (SM EX 312 - 318)	36.004	0.00	288.03
20 TO 25 MT (CAT 320,321)	64.930	0.00	779.16
30 TO 35 MT (CAT 328,329)	97.206	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.949	0.00	495.18
78 - 84" Single Drum / Combo / Vibro	30.949	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	194.05
Plate Compactor	4.310	0.00	137.92
Rough Terrain Crane 70-79 Ton	73.751	0.00	295.00
Rough Terrain Crane 80-89 Ton	73.751	0.00	590.01
Rough Terrain Crane 90-99 Ton	73.751	0.00	590.01
Rough Terrain Crane 90-99 Ton	73.751	0.00	590.01
Rough Terrain Crane 100-110 Ton	73.751	0.00	295.00
Carry Deck Crane <15 Ton	49.050	0.00	196.20
Carry Deck Crane >15 Ton	49.050	0.00	196.20
Crane Hyd/C 130-150 Ton	73.751	0.00	295.00
Crane Hyd/C 265 Ton	123.100	0.00	492.40
175-225 Ton Lattice Crawler Crane	123.100	0.00	492.40
175-225 Ton Lattice Crawler Crane	123.100	0.00	0.00
175-225 Ton Lattice Crawler Crane	123.100	0.00	0.00
230-250 Ton Lattice Crawler Crane	123.100	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	492.40
300-330 Ton Lattice Crawler Crane	123.100	0.00	492.40
300-330 Ton Lattice Crawler Crane	123.100	0.00	492.40
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00
300-330 Ton Lattice Crawler Crane	123.100	0.00	0.00
601- 800 Ton Lattice Crawler Crane	213.607	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	0.00	629.06
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	157.26
375 CFM Air Compressor - Diesel	19.658	0.00	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.577	0.00	343.10
1 - 24 KW Generator	20.059	641.89	320.95
Portable Light Plant - Moon Glo's	6.906	662.93	0.00
Road Broom	38.369	0.00	153.48
Road Broom	38.369	0.00	0.00
Cat IT28, 928, 930, 938 Loader	62.950	0.00	251.80
Cat 966, JA744, WA500, L150 Loader	87.529	700.23	700.23
Skid Steer-Wheeled	36.319	0.00	0.00
Skid Steer - Track	36.319	435.83	581.11
Rough Terrain Scissor Lift	18.396	147.17	0.00
40' Manlift	18.396	0.00	147.17
40' Manlift	18.396	588.67	441.51
60' Manlift	18.396	0.00	441.51
80' Manlift	18.396	0.00	294.34
120' Manlift	18.396	0.00	73.58
135' Manlift	18.396	0.00	73.58
150' Manlift	18.396	0.00	73.58
Forklift	45.111	0.00	0.00
30,000 lb and Greater Straight Mast	58.826	0.00	235.30
30,000 lb and Greater Straight Mast	58.826	0.00	235.30
6,000 - 8,000 lb Extendable	31.041	0.00	248.33
9,000 - 10,000 lb Extendable	45.111	0.00	360.89
9,000 - 10,000 lb Extendable	45.111	0.00	1082.67
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.479	0.00	0.00
Fusion Machine >36" Ips	59.106	0.00	0.00
Total		3612.56	14539.07

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Month	
Fuel (gal/day)	**2023**	**1**	**2**
JD-210, Case 580 - Box Blades	1.614	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.614	19.37	12.91
Cat 14 Grader	4.547	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	0.00	12.80
20 TO 25 MT (CAT 320,321)	2.886	0.00	34.63
30 TO 35 MT (CAT 328,329)	4.320	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.375	0.00	22.01
78 - 84" Single Drum / Combo / Vibro	1.375	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	8.62
Plate Compactor	0.197	0.00	6.30
Rough Terrain Crane 70-79 Ton	3.278	0.00	13.11
Rough Terrain Crane 80-89 Ton	3.278	0.00	26.22
Rough Terrain Crane 90-99 Ton	3.278	0.00	26.22
Rough Terrain Crane 90-99 Ton	3.278	0.00	26.22
Rough Terrain Crane 100-110 Ton	3.278	0.00	13.11
Carry Deck Crane <15 Ton	2.180	0.00	8.72
Carry Deck Crane >15 Ton	2.180	0.00	8.72
Crane Hyd/C 130-150 Ton	3.278	0.00	13.11
Crane Hyd/C 265 Ton	5.471	0.00	21.88
175-225 Ton Lattice Crawler Crane	5.471	0.00	21.88
175-225 Ton Lattice Crawler Crane	5.471	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.471	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.471	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	21.88
300-330 Ton Lattice Crawler Crane	5.471	0.00	21.88
300-330 Ton Lattice Crawler Crane	5.471	0.00	21.88
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.471	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.493	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	0.00	27.96
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	6.99
375 CFM Air Compressor - Diesel	0.874	0.00	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	0.00	15.65
1 - 24 KW Generator	0.892	28.53	14.26
Portable Light Plant - Moon Glo's	0.704	67.62	0.00
Road Broom	1.705	0.00	6.82
Road Broom	1.705	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.798	0.00	11.19
Cat 966, JA744, WA500, L150 Loader	3.890	31.12	31.12
Skid Steer-Wheeled	1.614	0.00	0.00
Skid Steer - Track	1.614	19.37	25.83
Rough Terrain Scissor Lift	0.818	6.54	0.00
40' Manlift	0.818	0.00	6.54
40' Manlift	0.818	26.16	19.62
60' Manlift	0.818	0.00	19.62
80' Manlift	0.818	0.00	13.08
120' Manlift	0.818	0.00	3.27
135' Manlift	0.818	0.00	3.27
150' Manlift	0.818	0.00	3.27
Forklift	2.005	0.00	0.00
30,000 lb and Greater Straight Mast	2.614	0.00	10.46
30,000 lb and Greater Straight Mast	2.614	0.00	10.46
6,000 - 8,000 lb Extendable	1.380	0.00	11.04
9,000 - 10,000 lb Extendable	2.005	0.00	16.04
9,000 - 10,000 lb Extendable	2.005	0.00	48.12
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.266	0.00	0.00
Fusion Machine >36" Ips	2.627	0.00	0.00
Total		198.71	646.74

Exhibit A
AltAir Renewable Fuels Project

Year 2 Month 4 - Onsite Construction Vehicle Trip Emissions

		Year 2 Month 4 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	3	6
Total Light Vehicle Miles		6	12
Water Truck	2	1	1
Delivery Truck	2	16	28
Fuel/Lube/Mechanic Truck	2	5	6
Misc. MD Truck	5	1	1
Total Medium Truck Miles		49	75
Dump Truck	2	43	72
HD Water Truck/Tractor	2	0	1
Bus	2	35	35
Misc. HD Truck	2	1	5
Total Heavy Truck Miles		158	226

	Emission Rate (lb/mi)[1]	**Year 2 Month 4 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000338	0.00	0.00
Medium Duty	0.0000654	0.00	0.00
Heavy Duty	0.0001559	0.02	0.04
Total		0.03	0.04
CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0017506	0.01	0.02
Medium Duty	0.0022870	0.11	0.17
Heavy Duty	0.0011544	0.18	0.26
Total		0.30	0.45
NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001801	0.00	0.00
Medium Duty	0.0006821	0.03	0.05
Heavy Duty	0.0072378	1.14	1.64
Total		1.18	1.69
SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000065	0.00	0.00
Medium Duty	0.0000108	0.00	0.00
Heavy Duty	0.0000289	0.00	0.01
Total		0.01	0.01
PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001066	0.00	0.00
Medium Duty Exhaust	0.0001423	0.01	0.01
Heavy Duty Exhaust	0.0002770	0.04	0.06
Total Exhaust PM		0.05	0.07
Light Duty Fugitive(2)	0.000221	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.02	0.04
Heavy Duty Fugitive(2)	0.002314	0.37	0.52
Total Fugitive PM		0.39	0.56
Total		0.44	0.64
PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000447	0.00	0.00
Medium Duty Exhaust	0.0000648	0.00	0.00
Heavy Duty Exhaust	0.0001388	0.02	0.03
Total Exhaust PM		0.03	0.04
Light Duty Fugitive(2)	0.000054	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.03	0.04
CO2EQ	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.665	3.99	7.97
Medium Duty	1.124	55.08	84.31
Heavy Duty	3.325	525.31	751.39
Total		584.38	843.68

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Year 3 Month 3 - Onsite Construction Vehicle Trip Emissions

		Year 3 Month 3 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	0	7
Total Light Vehicle Miles		0	14
Water Truck	2	1	1
Delivery Truck	2	2	10
Fuel/Lube Truck	2	0	2
Misc. MD Truck	5	1	1
Total Medium Truck Miles		11	31
Dump Truck	2	2	3
Semi-Tractor, Diesel 20 Ton	2	0	0
Bus	2	37	37
Misc. HD Truck	2	1	1
Total Heavy Truck Miles		80	82

	Emission Rate (lb/mi)[1]	**Year 3 Month 3 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000338	0.00	0.00
Medium Duty	0.0000654	0.00	0.00
Heavy Duty	0.0001559	0.01	0.01
Total		0.01	0.02
CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0017506	0.00	0.02
Medium Duty	0.0022870	0.03	0.07
Heavy Duty	0.0011544	0.09	0.09
Total		0.12	0.19
NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001801	0.00	0.00
Medium Duty	0.0006821	0.01	0.02
Heavy Duty	0.0072378	0.58	0.59
Total		0.59	0.62
SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000065	0.00	0.00
Medium Duty	0.0000108	0.00	0.00
Heavy Duty	0.0000289	0.00	0.00
Total		0.00	0.00
PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001066	0.00	0.00
Medium Duty Exhaust	0.0001423	0.00	0.00
Heavy Duty Exhaust	0.0002770	0.02	0.02
Total Exhaust PM		0.02	0.03
Light Duty Fugitive[2]	0.000221	0.00	0.00
Medium Duty Fugitve[2]	0.000467	0.01	0.01
Heavy Duty Fugitive[2]	0.002314	0.19	0.19
Total Fugitive PM		0.19	0.21
Total		0.21	0.24
PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000447	0.00	0.00
Medium Duty Exhaust	0.0000648	0.00	0.00
Heavy Duty Exhaust	0.0001388	0.01	0.01
Total Exhaust PM		0.01	0.01
Light Duty Fugitive[2]	0.000054	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.01	0.01
CO_{2EQ}	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.665	0.00	9.30
Medium Duty	1.124	12.37	34.85
Heavy Duty	3.325	265.98	272.63
Total		278.35	316.78

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Year 3 Month 4 - Onsite Construction Vehicle Trip Emissions

		Year 3 Month 4 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	6	7
Total Light Vehicle Miles		12	14
Water Truck	2	1	1
Delivery Truck	2	3	9
Fuel/Lube Truck	2	5	2
Misc. MD Truck	5	1	1
Total Medium Truck Miles		23	29
Dump Truck	2	2	2
Semi-Tractor, Diesel 20 Ton	2	0	0
Bus	2	30	30
Misc. HD Truck	2	1	1
Total Heavy Truck Miles		66	66

	Emission Rate (lb/mi)[1]	**Year 3 Month 4 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000296	0.00	0.00
Medium Duty	0.0000451	0.00	0.00
Heavy Duty	0.0000524	0.00	0.00
Total		0.00	0.01
CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0016139	0.02	0.02
Medium Duty	0.0020146	0.05	0.06
Heavy Duty	0.0009297	0.06	0.06
Total		0.13	0.14
NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001590	0.00	0.00
Medium Duty	0.0004915	0.01	0.01
Heavy Duty	0.0054073	0.36	0.36
Total		0.37	0.37
SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000063	0.00	0.00
Medium Duty	0.0000105	0.00	0.00
Heavy Duty	0.0000273	0.00	0.00
Total		0.00	0.00
PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001063	0.00	0.00
Medium Duty Exhaust	0.0001344	0.00	0.00
Heavy Duty Exhaust	0.0002576	0.02	0.02
Total Exhaust PM		0.02	0.02
Light Duty Fugitive[2]	0.000221	0.00	0.00
Medium Duty Fugitve[2]	0.000467	0.01	0.01
Heavy Duty Fugitive[2]	0.002314	0.15	0.15
Total Fugitive PM		0.17	0.17
Total		0.19	0.19
PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000445	0.00	0.00
Medium Duty Exhaust	0.0000570	0.00	0.00
Heavy Duty Exhaust	0.0001202	0.01	0.01
Total Exhaust PM		0.01	0.01
Light Duty Fugitive[2]	0.000054	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.01	0.01
CO_{2EQ}	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.644	7.72	9.01
Medium Duty	1.087	24.99	31.51
Heavy Duty	3.147	207.70	207.70
Total		240.42	248.22

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	9
Total Light Vehicle Miles		0.45
Delivey Trucks	0.05	28
Water Trucks	0.1	2
Total Medium Truck Miles		1.6
Dump Trucks	0.05	115
Semi-Tractor, Diesel 20 Ton	0.05	5
Total Heavy Truck Miles		6
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	16
Total Heavy-Heavy Duty Miles		1.2

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.41
Medium Duty	1.2863357	2.06
Heavy Duty	2.1931267	13.16
Heavy Heavy Duty	2.4962390	3.00
Uncontrolled Total		18.62
Controlled Total[2]		7.26

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	7
Total Light Vehicle Miles		0.35
Delivey Trucks	0.05	28
Water Trucks	0.1	2
Total Medium Truck Miles		1.6
Dump Trucks	0.05	5
Semi-Tractor, Diesel 20 Ton	0.05	1
Total Heavy Truck Miles		0.3
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	2
Total Heavy-Heavy Duty Miles		0.5

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.32
Medium Duty	1.2863357	2.06
Heavy Duty	2.1931267	0.66
Heavy Heavy Duty	2.4962390	1.25
Uncontrolled Total		4.28
Controlled Total[2]		1.67

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	13
Total Light Vehicle Miles		0.65
Delivey Trucks	0.05	11
Water Trucks	0.1	2
Total Medium Truck Miles		0.75
Dump Trucks	0.05	4
Semi-Tractor, Diesel 20 Ton	0.05	1
Total Heavy Truck Miles		0.25
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	5
Total Heavy-Heavy Duty Miles		0.65

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.59
Medium Duty	1.2863357	0.96
Heavy Duty	2.1931267	0.55
Heavy Heavy Duty	2.4962390	1.62
Uncontrolled Total		3.72
Controlled Total[2]		1.45

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	6
Total Light Vehicle Miles		0.3
Delivey Trucks	0.05	10
Water Trucks	0.1	2
Total Medium Truck Miles		0.7
Dump Trucks	0.05	10
Semi-Tractor, Diesel 20 Ton	0.05	2
Total Heavy Truck Miles		0.6
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	5
Total Heavy-Heavy Duty Miles		0.65

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.27
Medium Duty	1.2863357	0.90
Heavy Duty	2.1931267	1.32
Heavy Heavy Duty	2.4962390	1.62
Uncontrolled Total		4.11
Controlled Total[2]		1.60

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Peak Monthly Fugitive PM Construction Emissions

Grading Operations	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	3	3	8	0.348	0.39	3.25	3.25	8.34327652	8.34327652	Table A9-9-F

Stockpiles	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	2000	2000	0.00005	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	20	1	1	0.120	0.120	0.120	0.001	0.001	Table A9-9-E

Filling and Dumping	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9
Truck Dumping	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9

TOTAL PM10 Pounds/day	Average	Peak
(Controlled Emissions)	3.4942	3.49419
(Uncontrolled Emissions)	8.654	8.654

(1) Emissions (lbs/hr) = [0.75 x $(G^{1.5})/(H^{1.4})$ x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x $[(G/5)^{1.3}/(H/2)^{1.4}]$ x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

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Paramount Petroleum AltAir Renewable Fuels Project
South Coast AQMD Localized Significance Threshold Analysis for Double Construction Shifts

October 2021

Prepared for: World Energy LLC

By: Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
714-632-8521
www.envaudit.com

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INTRODUCTION

This Localized Significance Threshold (LST) analysis has been prepared to evaluate the potential impacts of the criteria pollutants carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM10), and particulate matter less than 2.5 microns in diameter (PM2.5) emitted by the potential double shift construction schedule activities associated with the proposed modifications to the AltAir Paramount Petroleum Refinery (Refinery) Renewable Fuels Project (Project). The single shift construction schedule has previously been analyzed; however, the second shift may operate at approximately 25 percent of the activity level of the first shift. Double-shift construction would have different results for the various averaging periods (i.e., 1-hour, 8-hour, 24-hour, and annual). Therefore, this additional analysis for the increased emissions during Year 2 of the construction schedule has been prepared separately to identify the worst-case conservative analysis presented in Table 6 of the Construction Emissions Analysis.

The California Air Resources Board began implementing the Low Carbon Fuel Standard in 2011 (Title 17, California Code of Regulations, Sections 95480-95490). The Low Carbon Fuel Standard requires a reduction in greenhouse gas (GHG) emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. It was these state requirements that resulted in a partnership between the Paramount Petroleum Refinery and AltAir to produce renewable fuels at the Paramount Refinery.

AltAir has been in partnership with Paramount Petroleum since 2013, when the Paramount Refinery began the process of converting portions of their oil refinery into renewable fuels production, under the Paramount Petroleum AltAir Renewable Fuels Project (Renewable Fuels Project). Construction of the initial modifications to the Paramount Refinery to produce renewable fuels occurred between 2014 and 2015, and the facility began producing Renewable Fuels in 2016.

In 2018, World Energy purchased AltAir and the Paramount Refinery, and AltAir became a wholly-owned subsidiary of World Energy. Under World Energy, AltAir proposes to complete the conversion of the Paramount Refinery to manufacturing only renewable fuels.

AltAir is now proposing to revise the Renewable Fuels Project to include a more comprehensive conversion of the refinery. The Renewable Fuels Project will convert the remainder of the 50.000[1] barrel (42 gallons per barrel) per day crude oil refinery into a 25,000 barrels per day renewable fuels production facility. This conversion will: eliminate the refining of crude oil; support use of renewable jet fuel, diesel, gasoline and propane; reduce mobile fuel emissions.

Environmental Audit, Inc. (EAI) has calculated construction emissions to evaluate the potential impacts from double shift construction activities associated with the changes to the Project. The LST analysis includes an air quality analysis of the criteria pollutants for the peak daily construction emissions from the Project. The results of this analysis are provided below.

[1] The refinery capacity was approximately 50,000 barrels per day when operating. A throughput limit condition was later imposed on the refinery operation.

FACILITY LOCATION

The Project is located at the existing Paramount Refinery located at 14700 Downey Avenue, Paramount, California (see Figure 1 and Figure 2). The City of Paramount is located east of the Los Angeles River and is approximately 16.5 miles southeast of downtown Los Angeles. The City of Paramount is bounded by the cities of South Gate, Downey, Bellflower, Long Beach, Compton, and Lynwood. The Refinery is bounded by Lakewood Boulevard, Somerset Boulevard, Downey Avenue, and Contreras Street.

The Project also includes modifications to operations at the Lakewood Tank Farm. The Lakewood Tank Farm is located at 2920 56th Way, Lakewood, California (see Figure 1). Existing storage and pipeline facilities at the company's off-site Lakewood Tank Farm will was previously used to store gas oil and will change service to jet fuel storage and blending. However, no construction activities are required so no construction emissions would occur at the Lakewood Tank Farm.

The Refinery is located immediately west of the City of Bellflower municipal boundary lines, and approximately one-quarter mile south of the City of Downey boundary line. Regional access to the Refinery is provided by Interstates 605 and 710 which run north-south approximately two-and-one quarter miles east and west of the Refinery, respectively. State Route 91 runs east-west and is located approximately two miles south of the Refinery. Interstate 105 runs east-west and is located about three-quarters of a mile north of the Refinery (see Figure 1).

The Refinery accounts for slightly more than half of the total acreage within the Somerset Ranch Area of the 1990 Paramount General Plan. The Somerset Ranch Area of Paramount is designated as "Mixed Use" and includes a mix of residential, commercial, industrial, and public uses. The Refinery is zoned M-2, Heavy Manufacturing. The land use pattern varies widely in the Paramount area on a parcel by parcel basis and reflects an area in transition from a variety of older land uses (that include the Refinery) to newer development (including apartment houses and commercial land uses, e.g., grocery stores and a Walmart).

EMISSION ESTIMATES

Construction emission estimates for the peak day are calculated by each project component that will be under construction during Year 2 of the construction schedule for the proposed project. Only Year 2 was calculated for this analysis since the previous analysis already analyzed the single shift construction schedules for Years 1 and 3. A summary of construction emissions is found on Table 1. More detailed construction emissions can be found in Exhibit A. Construction emissions vary based on activities and the worst-case scenario has been evaluated by assuming the peak day for each month occurs on each day of the month. It is expected that the calculated peak day emissions estimates will occur infrequently during the proposed project construction activities and, most of the time, construction emissions will be less.

Construction activities by month for the Project are calculated to determine the peak construction day, based on the updated construction schedule. Only on-site emissions sources are included, and though equipment (such as cranes) would be shared between project components, no equipment

sharing was assumed for this LST analysis. Peak hourly emission rates were used for all averaging periods for CO, NO_2, and 1-hour averaging period for PM10 and PM2.5. Annual average emissions rates were used for annual averaging periods for PM10 and PM2.5. The use of peak hourly emission rates will overestimate results for annual averaging periods for NO_2, which is conservative. The peak on-site construction day for most project components is spread over 20 hours for this double shift analysis and is expected to occur during Year 2 Month 4 (PM10 and PM2.5) and Year 2 Month 12 (CO and NO_2). Construction activities included in this evaluation are the use of construction equipment and fugitive dust emissions from earth moving activities during first shift.

CRITERIA POLLUTANT IMPACT MODELING

In order to determine the groundlevel concentrations associated with the peak construction activities, the U.S. EPA AERMOD air dispersion model was used to model the peak day construction emissions (see Table 1) and calculate the annual average and maximum 1-hour, 8-hour, and 24-hour concentrations. NO_2 emissions were estimated using a full conversion of NOx to NO_2.

The location of the source is identified based on data provided by AltAir and the South Gate USGS Quadrangle (see Figure 2). The dispersion model was run using the Long Beach meteorological data available from the South Coast AQMD and used regulatory defaults.

The model only includes area sources, which are not subject to building downwash effects. However, the model was set to include algorithms to model the effects of building downwash on emissions.

Terrain elevations were taken into account even though the facility and the vicinity are in a relatively flat area.

The AERMOD model was run using a receptor grid of 100 meters that extends at least 1,000 meters in every cardinal direction from the boundaries of the Refinery and any individual sensitive receptors (schools, parks, etc.) within the receptor grid (see Figure 2). The maximum impact location was determined for the applicable averaging periods from the AERMOD model output. The maximum groundlevel concentrations are presented in Table 2.

MODELED CRITERIA POLLUTANT IMPACT ANALYSIS

The Project maximum groundlevel concentrations were compared to the localized significance thresholds to determine if the Project would cause or contribute to a violation of any State or Federal ambient air quality standard. The ambient air quality data for South Coastal Los Angeles County and South Central Los Angeles County (Station No. 033 and 112) was used to establish background levels of the pollutants. Table 3 identifies the ambient air quality data for CO, NO_2, PM10, and PM2.5 published by the South Coast AQMD in the last three years (2017, 2018, and 2019).

The CO and NO_2 concentrations were combined with the ambient background concentrations and compared to the Most Stringent Air Quality Standard. The PM10 and PM2.5 24-hour, and PM10 and PM2.5 annual average concentrations were compared to the Significant Change in Air Quality Concentration thresholds. Impacts from other criteria pollutants are regional in nature or in attainment and, therefore, were not included as part of the localized air quality analysis. The maximum impact locations are shown in Figure 2.

State Standards

The maximum CO impact concentrations for 1-hour and 8-hour averages are 7,300.2 and 5,440.4 micrograms per cubic meter ($\mu g/m^3$), respectively. The maximum NO_2 impact concentrations for 1-hour and annual averages are 388.1 and 44.3 $\mu g/m^3$, respectively. The maximum PM10 impact concentrations for 24-hour and annual averages are 6.9 and 0.7 $\mu g/m^3$, respectively. The maximum PM2.5 impact concentrations for 24-hour and annual averages are 2.8 and 0.5 $\mu g/m^3$, respectively. Therefore, the Project modeling results exceed the State criteria pollutant significance threshold for 1-hour NO_2. The results are presented in Table 4.

Federal Standards

The maximum CO impact concentrations for 1-hour and 8-hour averages are 7,300.2 and 5,440.4 $\mu g/m^3$, respectively. The maximum NO_2 impact concentrations for 1-hour and annual averages are 316.9 and 44.3 $\mu g/m^3$, respectively. The maximum PM10 impact concentrations for 24-hour and annual averages are 6.9 and 0.7 $\mu g/m^3$, respectively. The maximum PM2.5 impact concentrations for 24-hour and annual averages are 2.8 and 0.5 $\mu g/m^3$, respectively. Therefore, the Project modeling results exceed the Federal criteria pollutant significance threshold for 1-hour NO_2. The results are presented in Table 4.

CONCLUSIONS

The emission impacts from the Project are expected to be greater than both state and federal air quality standards for 1-hour NO_2 during the peak of on-site double shift construction. The emission impacts from the Proposed Project are expected to be less than the CO, annual NO_2, and PM emission standards during the double shift construction phase.

TABLES

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Paramount Refinery Renewable Fuels Project
Localized Significance Threshold Analysis

Table 1. Onsite Construction Emission Summary for Peak Pollutants

	CO		NOx		PM10		PM2.5	
Total Emissions - lb/hr	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
Peak Hourly	3.23	5.51	1.85	3.71	0.32	0.39	0.09	0.16

Assumes 10 hour working days.

	CO		NOx		PM10		PM2.5	
Total Emissions - lb/day	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
Peak Daily	64.65	110.29	36.94	74.14	6.37	7.76	1.83	3.17

Paramount Refinery Renewable Fuels Project
Localized Significance Threshold Analysis

Table 2. Modeling Results

Criteria Pollutant	Averaging Period	Max Modeled GLC Conc. ($\mu g/m^3$)	UTME	UTMN
CO	1-hr	315.7	393900	3751300
	8-hr	173.4	393900	3751300
NO_2	1-hr	201.8	393900	3751300
	1-hr (98%)	191.3	393900	3751300
	Annual	14.0	393900	3751300
PM10	24-hr	6.9	393900	3751300
	Annual	0.7	393900	3751300
PM2.5	24-hr	2.8	393900	3751300
	Annual	0.5	393900	3751300

Model results based on the last 5 years of available meterological data from SCAQMD for Long Beach.

Table 3. Ambient Concentrations

Criteria Pollutant	Averaging Period	Concentration (ppb)			Max Conc.	
		2017	2018	2019	(ppb)	($\mu g/m^3$)
CO	1-hr	6100	4700	3800	6100	6984.50
	8-hr	4600	3500	3200	4600	5267.00
NO_2	1-hr	99.1	68.3	70	99.1	186.31
	1-hr (98%)	66.8	55.6	52.8	66.8	125.58
	AAM	16.1	15	14.1	16.1	30.27
		Concentration ($\mu g/m^3$)				
PM10	24-hr	79	84	74		84.0
	AAM	33.3	32.3	26.9		33.3
PM2.5	24-hr	66.7	43	39.5		66.7
	AAM	12.92	12.96	10.87		13.0

Data from South Coastal LA County Station 33 and South Central LA County Station 112

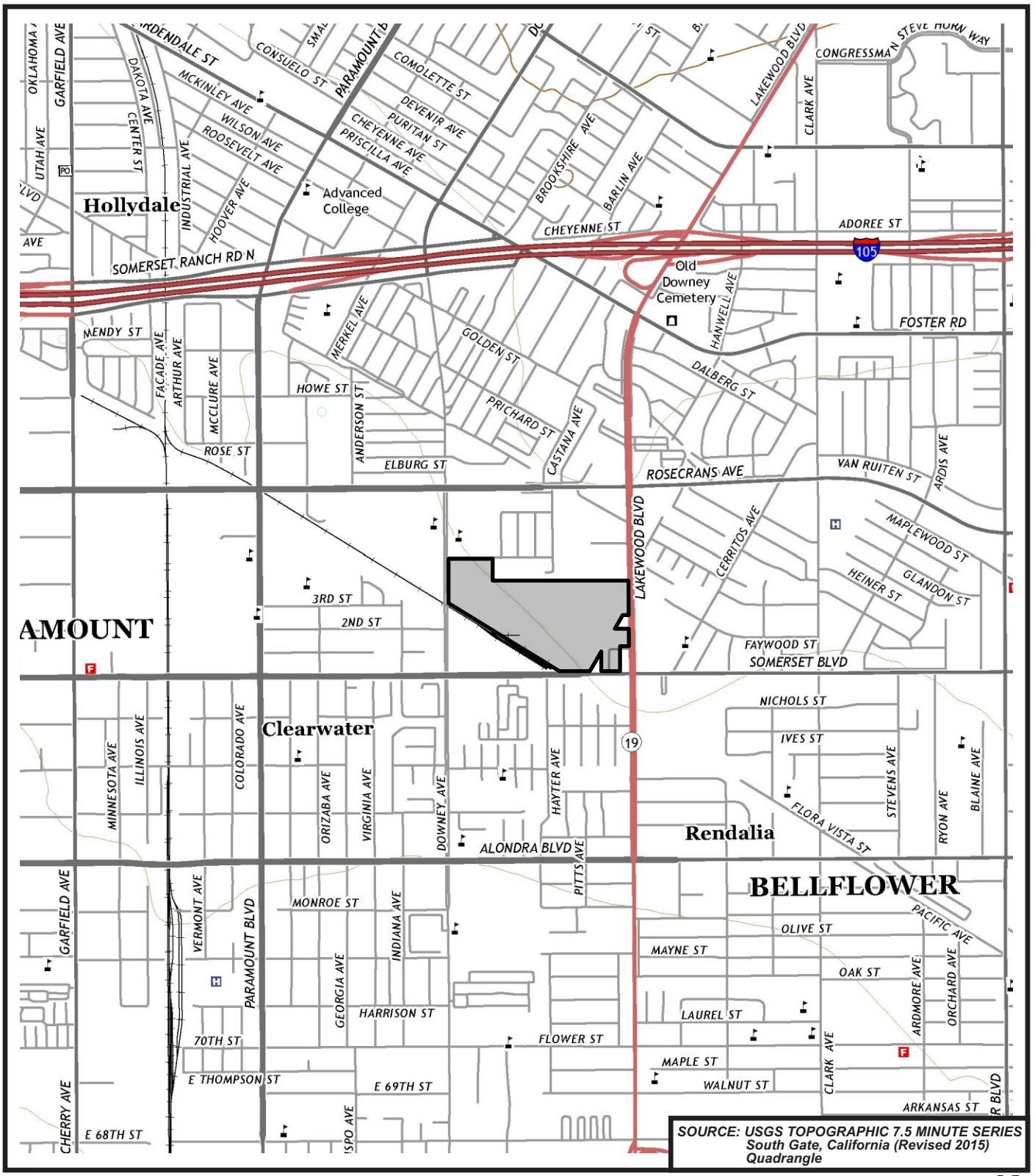
AAM = Annual Arithmetic Mean

Table 4. Localized Significance Threshold Summary

Criteria Pollutant	Averaging Period	Max Modeled GLC Conc. ($\mu g/m^3$)	Background GLC Conc. ($\mu g/m^3$)	Total GLC Conc. ($\mu g/m^3$)	Most Stringent Air Quality Standard ($\mu g/m^3$)	Significant
CO	1-hour	315.7	6984.5	7300.2	23000	NO
	8-hour	173.4	5267.0	5440.4	10000	NO
NO_2	1-hour	201.8	186.3	388.1	339	YES
	1-hour (Federal)	191.3	125.6	316.9	188	YES
	Annual	14.0	30.3	44.3	57	NO
PM10	24-hour	6.9	--	--	10.4	NO
	Annual	0.7	--	--	1	NO
PM2.5	24-hour	2.8	--	--	10.4	NO
	Annual	0.5	--	--	1	NO

FIGURES

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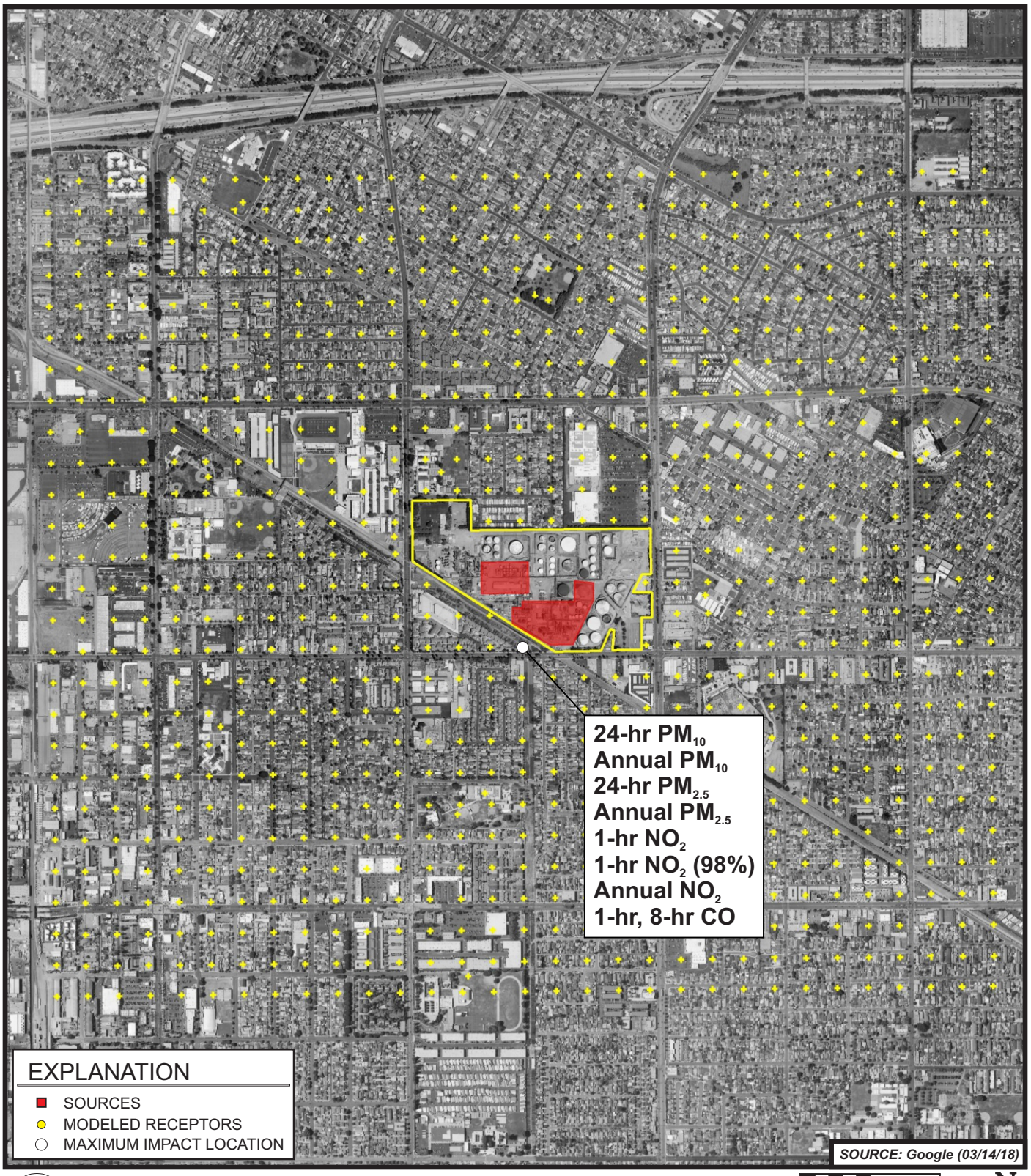
Environmental Audit, Inc.

SITE LOCATION MAP
PARAMOUNT PETROLEUM ALTAIR RENEWABLE FUELS PROJECT

Project No. 3119

Figure 1

N:\3119\SiteLocMap (rev.LST).cdr



Environmental Audit, Inc.

LST MAXIMUM IMPACT LOCATION MAP
PARAMOUNT PETROLEUM ALTAIR RENEWABLE FUELS PROJECT

Project No. 3119

Figure 2

N:\3119\SiteLocMap (rev.1).cdr

EXHIBITS

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Exhibit A

CONSTRUCTION EMISSIONS CALCULATIONS

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Exhibit A
Alt Air Renewable Fuels Project
Total Project Component
Construction Emission Summary

		Year 2											
Emissions from Equipment		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)		155.41	167.75	167.16	170.39	148.55	157.24	142.78	145.43	163.06	171.33	169.23	174.58
NOx (lb/day)		72.95	75.97	77.64	80.16	72.71	79.58	75.39	78.70	98.62	105.40	105.84	109.89
PM10 (lb/day)		2.02	2.09	2.06	2.29	2.01	2.35	2.39	2.55	2.98	3.25	3.26	3.39
PM2.5 (lb/day)		2.00	2.08	2.05	2.27	2.00	2.34	2.37	2.53	2.96	3.22	3.23	3.36

		Year 2											
Emission from Trips - Onsite		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)		0.64	0.69	0.69	0.69	0.63	0.34	0.33	0.37	0.35	0.32	0.31	0.28
NOx (lb/day)		2.21	2.24	2.76	2.39	1.50	1.00	1.00	1.22	1.09	0.91	0.95	0.78
PM10 (lb/day)		0.84	0.86	1.03	0.91	0.60	0.39	0.39	0.47	0.42	0.35	0.37	0.30
Exhaust PM (lb/day)		0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04
Fugitive PM (lb/day)		0.74	0.75	0.91	0.80	0.53	0.34	0.34	0.41	0.37	0.31	0.32	0.27
PM2.5 (lb/day)		0.23	0.23	0.27	0.24	0.17	0.11	0.10	0.13	0.11	0.10	0.10	0.08
Exhaust PM (lb/day)		0.10	0.10	0.12	0.11	0.08	0.05	0.05	0.06	0.05	0.04	0.05	0.04
Fugitive PM (lb/day)		0.13	0.13	0.15	0.14	0.09	0.06	0.06	0.07	0.06	0.05	0.05	0.05

		Year 2											
Fugitive Earthmoving PM - Peak		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]		3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	0.00	0.00	0.00	0.00
PM2.5 (lb/day)[1][2]		1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.00	0.00	0.00	0.00

		Year 2											
Offroad Fugitive PM - Average		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PM10 (lb/day)[1]		1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63
PM2.5 (lb/day)[1][2]		0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28

		Year 2											
Total Emissions	**Maximum**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO (lb/day)	174.86	156.05	168.45	167.85	171.07	149.18	157.58	143.11	145.80	163.41	171.64	169.54	**174.86**
NOx (lb/day)	110.66	75.16	78.21	80.41	82.55	74.22	80.58	76.39	79.92	99.71	106.32	106.80	**110.66**
PM10 (lb/day)[1]	8.31	7.98	8.07	8.22	**8.31**	7.74	7.86	7.89	8.14	5.03	5.23	5.25	5.32
PM2.5 (lb/day)[1][2]	3.95	3.52	3.60	3.61	3.80	3.46	3.73	3.76	**3.95**	3.35	3.59	3.60	3.72
PM10 (lb/day) - Annual Average[1]	7.09												**7.09**
PM2.5 (lb/day) - Annual Average[1][2]	3.64												**3.64**

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

Highlighted values are maximums.

Attachment A
Alt Air Renewable Fuels Project
LST Analysis
Modeling Source Emissions

	Peak CO		Peak NOx		Peak PM10		Peak PM2.5	
Total Emissions - lb/hr	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
CO	3.23	5.51						
NOx			1.85	3.71				
PM10 - Peak					0.32	0.39		
PM2.5 - Peak							0.09	0.16
PM10 - Annual Average					0.16	0.16		
PM2.5 - Annual Average							0.07	0.12

Assumes 10 hour working days.

	Peak CO		Peak NOx		Peak PM10		Peak PM2.5	
Total Emissions - lb/day	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**	**Hydrogen Plant**	**Unit B**
CO	64.65	110.29						
NOx			36.94	74.14				
PM10 - Peak Day					6.37	7.76		
PM2.5 - Peak Day							1.83	3.17
PM10 - Annual Average Day					3.19	3.19		
PM2.5 - Annual Average Day							1.33	2.31

Annual average PM emissions based on 1 year annual average PM for total construction. Total PM was proportionally divided between project areas based on peak day.

Exhibit A
Alt Air Renewable Fuels Project
Total Project Component
Construction Emission Summary

	Hydrogen Plant			Unit B			Totals		
Emissions from Equipment	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**
CO (lb/day)	52.21	46.48	64.48	118.18	98.94	110.09	170.39	145.43	174.58
NOx (lb/day)	21.27	19.37	36.36	58.89	59.33	73.53	80.16	78.70	109.89
PM10 (lb/day)	0.54	0.45	0.86	1.75	2.11	2.53	2.29	2.55	3.39
PM2.5 (lb/day)	0.53	0.44	0.86	1.73	2.09	2.51	2.27	2.53	3.36

	Hydrogen Plant			Unit B			Totals		
Emission from Trips - Onsite	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**
CO (lb/day)	0.32	0.17	0.17	0.45	0.29	0.20	0.77	0.46	0.37
NOx (lb/day)	1.21	1.06	0.58	1.69	1.21	0.62	2.90	2.28	1.19
PM10 (lb/day)	0.45	0.39	0.29	0.64	0.45	0.31	1.09	0.84	0.60
Exhuast PM (lb/day)	0.05	0.05	0.03	0.07	0.05	0.03	0.13	0.10	0.07
Fugitive PM (lb/day)	0.40	0.35	0.26	0.56	0.40	0.27	0.96	0.75	0.53
PM2.5 (lb/day)	0.03	0.10	0.07	0.17	0.12	0.08	0.20	0.22	0.16
Exhuast PM (lb/day)	0.03	0.05	0.03	0.07	0.05	0.03	0.10	0.10	0.07
Fugitive PM (lb/day)	0.00	0.06	0.04	0.10	0.07	0.05	0.10	0.13	0.09

	Hydrogen Plant			Unit B			Totals		
Fugitive Earthmoving PM - Peak	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**
PM10 (lb/day)[1]	1.75	0.00	0.00	1.75	0.00	0.00	3.49	0.00	0.00
PM2.5 (lb/day)[1][2]	0.51	0.00	0.00	0.51	0.00	0.00	1.01	0.00	0.00

	Hydrogen Plant			Unit B			Totals		
Offroad Fugitive PM - Peak	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**
PM10 (lb/day)[1]	3.63	1.26	0.93	3.63	1.26	0.93	7.26	2.53	1.86
PM2.5 (lb/day)[1][2]	0.76	0.27	0.20	0.76	0.27	0.20	1.52	0.53	0.39

		Hydrogen Plant			Unit B			Totals		
Total Emissions	**Thresholds**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**	**Year 2 Month 4**	**Year 2 Month 8**	**Year 2 Month 12**
CO (lb/day)	550	52.53	46.65	64.65	118.63	99.23	110.29	171.16	145.88	**174.94**
NOx (lb/day)	100	22.48	20.43	36.94	60.58	60.55	74.14	83.06	80.98	**111.08**
PM10 (lb/day)[1]	150	6.37	2.10	2.08	7.76	3.82	3.77	**14.13**	5.92	5.85
PM2.5 (lb/day)[1][2]	55	1.83	0.81	1.13	3.17	2.48	2.78	**5.00**	3.29	3.91

(1) Mitigated PM.

(2) https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

Highlighted values are maximums.

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emission Rates

Equipment Type	OFFROAD 2017 Equipment Type	HP	Fuel	2022 Emission Factors lb/hr[1]								2023 Emission Factors lb/hr[1]							
				VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	Fuel
JD-210, Case 580 - Box Blades	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Small Loader/Backhoe (Cat 416-Cat 436)	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Cat 14 Grader	ConstMin - Graders	300	Diesel	0.06	0.25	0.20	0.00	0.01	0.01	102.99	4.58	0.06	0.25	0.20	0.00	0.01	0.01	102.31	4.55
10-19 MT (SM EX 312 - 318)	ConstMin - Excavators	100	Diesel	0.02	0.24	0.07	0.00	0.00	0.00	36.00	1.60	0.02	0.24	0.07	0.00	0.00	0.00	36.00	1.60
20 TO 25 MT (CAT 320,321)	ConstMin - Excavators	175	Diesel	0.02	0.38	0.12	0.00	0.01	0.01	64.92	2.89	0.02	0.38	0.12	0.00	0.01	0.01	64.93	2.89
30 TO 35 MT (CAT 328,329)	ConstMin - Excavators	300	Diesel	0.03	0.21	0.20	0.00	0.01	0.01	97.25	4.32	0.03	0.20	0.20	0.00	0.01	0.01	97.21	4.32
40 - 48" Single Drum / Smooth / Vibro	ConstMin - Rollers	75	Diesel	0.02	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.02	0.36	0.05	0.00	0.00	0.00	30.95	1.38
78 - 84" Single Drum / Combo / Vibro	ConstMin - Rollers	75	Diesel	0.02	0.36	0.05	0.00	0.00	0.00	30.47	1.35	0.02	0.36	0.05	0.00	0.00	0.00	30.95	1.38
Walk Behind Roller (2-Drum) (RAMMEX)	ConstMin - Rollers	25	Diesel	*0.08*	*0.22*	*0.16*	*0.00*	*0.00*	*0.00*	*12.13*	*0.54*	0.08	0.23	0.16	0.00	0.00	0.00	12.13	0.54
Plate Compactor	OFF - ConstMin - Plate Compactors	25	Diesel	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20	0.00	0.03	0.03	0.00	0.00	0.00	4.31	0.20
Rough Terrain Crane 70-79 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 80-89 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 90-99 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Rough Terrain Crane 100-110 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Carry Deck Crane <15 Ton	ConstMin - Cranes	175	Diesel	0.04	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Carry Deck Crane >15 Ton	ConstMin - Cranes	175	Diesel	0.04	0.32	0.12	0.00	0.01	0.01	49.10	2.18	0.04	0.32	0.12	0.00	0.01	0.01	49.05	2.18
Crane Hyd/C 130-150 Ton	ConstMin - Cranes	300	Diesel	0.05	0.25	0.20	0.00	0.01	0.01	73.88	3.28	0.04	0.25	0.20	0.00	0.01	0.01	73.75	3.28
Crane Hyd/C 265 Ton	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
175-225 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
230-250 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
300-330 Ton Lattice Crawler Crane	ConstMin - Cranes	600	Diesel	0.06	0.44	0.40	0.00	0.02	0.02	122.97	5.47	0.05	0.40	0.40	0.00	0.02	0.02	123.10	5.47
601- 800 Ton Lattice Crawler Crane	ConstMin - Cranes	750	Diesel	0.13	1.05	0.50	0.00	0.02	0.02	211.98	9.42	0.15	1.16	0.50	0.00	0.02	0.02	213.61	9.49
185 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
250 - 300 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
375 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	50	Diesel	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87	0.01	0.12	0.09	0.00	0.00	0.00	19.66	0.87
1600 CFM Air Compressor - Diesel	Portable Equipment - Rental Compressor	600	Diesel	0.04	0.37	0.28	0.00	0.01	0.01	193.59	8.60	0.03	0.37	0.23	0.00	0.01	0.01	193.59	8.60
300 - 350 Amp Diesel Welder	OFF - Light Commercial - Welders	25	Diesel	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39	0.01	0.04	0.07	0.00	0.00	0.00	8.58	0.39
1 - 24 KW Generator	Portable Equipment - Rental Generator	50	Diesel	0.02	0.21	0.13	0.00	0.00	0.00	20.06	0.89	0.02	0.21	0.11	0.00	0.00	0.00	20.06	0.89
Portable Light Plant - Moon Glo's	OFF - Light Commercial - Generator Sets	25	Gasoline	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.71	0.07	0.23	0.05	0.00	0.00	0.00	6.91	0.70
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.02	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.02	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Road Broom	ConstMin - Sweepers/Scrubbers	75	Diesel	0.02	0.28	0.05	0.00	0.00	0.00	38.70	1.72	0.02	0.31	0.05	0.00	0.00	0.00	38.37	1.71
Cat IT28, 928, 930, 938 Loader	ConstMin - Rubber Tired Loaders	175	Diesel	0.04	0.40	0.12	0.00	0.01	0.01	63.02	2.80	0.03	0.39	0.12	0.00	0.01	0.01	62.95	2.80
Cat 966, JA744, WA500, L150 Loader	ConstMin - Rubber Tired Loaders	300	Diesel	0.04	0.21	0.20	0.00	0.01	0.01	87.61	3.89	0.03	0.20	0.20	0.00	0.01	0.01	87.53	3.89
Skid Steer-Wheeled	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Skid Steer - Track	ConstMin - Skid Steer Loaders	100	Diesel	0.01	0.21	0.07	0.00	0.00	0.00	32.12	1.43	0.03	0.40	0.07	0.00	0.00	0.00	36.32	1.61
Rough Terrain Scissor Lift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
40' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
60' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
80' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
120' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
135' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
150' Manlift	Industrial - Aerial Lifts	50	Diesel	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82	0.01	0.10	0.09	0.00	0.00	0.00	18.40	0.82
Forklift	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.03	0.33	0.12	0.00	0.01	0.01	58.83	2.61
30,000 lb and Greater Straight Mast	ConstMin - Rough Terrain Forklifts	175	Diesel	0.03	0.33	0.12	0.00	0.01	0.01	58.64	2.61	0.03	0.33	0.12	0.00	0.01	0.01	58.83	2.61
6,000 - 8,000 lb Extendable	ConstMin - Rough Terrain Forklifts	75	Diesel	0.02	0.35	0.05	0.00	0.00	0.00	31.04	1.38	0.02	0.35	0.05	0.00	0.00	0.00	31.04	1.38
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
9,000 - 10,000 lb Extendable	ConstMin - Rough Terrain Forklifts	100	Diesel	0.01	0.27	0.07	0.00	0.00	0.00	45.07	2.00	0.01	0.27	0.07	0.00	0.00	0.00	45.11	2.00
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	Industrial - Other General Industrial Equipment	25	Diesel	0.08	0.21	0.14	0.00	0.00	0.00	11.06	0.49	*0.08*	*0.21*	*0.14*	*0.00*	*0.00*	*0.00*	*11.06*	*0.49*
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	Industrial - Other General Industrial Equipment	75	Diesel	0.01	0.19	0.05	0.00	0.00	0.00	28.42	1.26	0.01	0.19	0.05	0.00	0.00	0.00	28.48	1.27
Fusion Machine >36" Ips	Industrial - Other General Industrial Equipment	175	Diesel	0.03	0.37	0.12	0.00	0.01	0.01	59.11	2.63	0.02	0.36	0.12	0.00	0.01	0.01	59.11	2.63

(1) OffRoad 2017 Model. *Italics indicate model did not have values, therefore, the previous year emission factors were used. Tier 4 equipment used when possible.*

App B Part 1 - 200

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 2 Month 4	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		
Small Loader/Backhoe (Cat 416-Cat 436)	5	3	2
Cat 14 Grader	4		
10-19 MT (SM EX 312 - 318)	4	2	2
20 TO 25 MT (CAT 320,321)	4	1	4
30 TO 35 MT (CAT 328,329)	4		2
40 - 48" Single Drum / Smooth / Vibro	8		4
78 - 84" Single Drum / Combo / Vibro	8		
Walk Behind Roller (2-Drum) (RAMMEX)	8		5
Plate Compactor	8	1	
Rough Terrain Crane 70-79 Ton	5		1
Rough Terrain Crane 80-89 Ton	5		1
Rough Terrain Crane 90-99 Ton	5		2
Rough Terrain Crane 90-99 Ton	5		1
Rough Terrain Crane 100-110 Ton	5		1
Carry Deck Crane <15 Ton	5		1
Carry Deck Crane >15 Ton	5		1
Crane Hyd/C 130-150 Ton	5		
Crane Hyd/C 265 Ton	5		
175-225 Ton Lattice Crawler Crane	5		1
175-225 Ton Lattice Crawler Crane	5		
175-225 Ton Lattice Crawler Crane	5		
230-250 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
601- 800 Ton Lattice Crawler Crane	5		
185 CFM Air Compressor - Diesel	10		4
250 - 300 CFM Air Compressor - Diesel	10		1
375 CFM Air Compressor - Diesel	10		
1600 CFM Air Compressor - Diesel	10		
300 - 350 Amp Diesel Welder	10		5
1 - 24 KW Generator	10	4	2
Portable Light Plant - Moon Glo's	10	12	5
Road Broom	5		1
Road Broom	5		
Cat IT28, 928, 930, 938 Loader	5		4
Cat 966, JA744, WA500, L150 Loader	5	2	2
Skid Steer-Wheeled	5		
Skid Steer - Track	5	3	4
Rough Terrain Scissor Lift	5	2	
40' Manlift	5		2
40' Manlift	5	8	4
60' Manlift	5		4
80' Manlift	5		2
120' Manlift	5		
135' Manlift	5		
150' Manlift	5		
Forklift	5		
30,000 lb and Greater Straight Mast	5		1
30,000 lb and Greater Straight Mast	5		
6,000 - 8,000 lb Extendable	5		
9,000 - 10,000 lb Extendable	5		2
9,000 - 10,000 lb Extendable	5		6
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	5		3
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	5		3
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	5		3
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	5		2
Fusion Machine >36" Ips	5		1

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
VOC (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.013	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.013	0.20	0.13
Cat 14 Grader	0.060	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.017	0.14	0.14
20 TO 25 MT (CAT 320,321)	0.024	0.09	0.38
30 TO 35 MT (CAT 328,329)	0.028	0.00	0.22
40 - 48" Single Drum / Smooth / Vibro	0.023	0.00	0.74
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	3.25
Plate Compactor	0.004	0.03	0.00
Rough Terrain Crane 70-79 Ton	0.046	0.00	0.23
Rough Terrain Crane 80-89 Ton	0.046	0.00	0.23
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.46
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.23
Rough Terrain Crane 100-110 Ton	0.046	0.00	0.23
Carry Deck Crane <15 Ton	0.042	0.00	0.21
Carry Deck Crane >15 Ton	0.042	0.00	0.21
Crane Hyd/C 130-150 Ton	0.046	0.00	0.00
Crane Hyd/C 265 Ton	0.055	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.135	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.00	0.24
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.06
375 CFM Air Compressor - Diesel	0.006	0.00	0.00
1600 CFM Air Compressor - Diesel	0.037	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.00	0.46
1 - 24 KW Generator	0.017	0.69	0.35
Portable Light Plant - Moon Glo's	0.070	8.38	3.49
Road Broom	0.023	0.00	0.12
Road Broom	0.023	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.035	0.00	0.71
Cat 966, JA744, WA500, L150 Loader	0.037	0.37	0.37
Skid Steer-Wheeled	0.013	0.00	0.00
Skid Steer - Track	0.013	0.20	0.26
Rough Terrain Scissor Lift	0.005	0.05	0.00
40' Manlift	0.005	0.00	0.05
40' Manlift	0.005	0.20	0.10
60' Manlift	0.005	0.00	0.10
80' Manlift	0.005	0.00	0.05
120' Manlift	0.005	0.00	0.00
135' Manlift	0.005	0.00	0.00
150' Manlift	0.005	0.00	0.00
Forklift	0.011	0.00	0.00
30,000 lb and Greater Straight Mast	0.028	0.00	0.14
30,000 lb and Greater Straight Mast	0.028	0.00	0.00
6,000 - 8,000 lb Extendable	0.023	0.00	0.00
9,000 - 10,000 lb Extendable	0.011	0.00	0.11
9,000 - 10,000 lb Extendable	0.011	0.00	0.33
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	1.15
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	1.15
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	1.15
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.013	0.00	0.13
Fusion Machine >36" Ips	0.029	0.00	0.15
Total		10.36	17.87

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
CO (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.210	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	3.14	2.10
Cat 14 Grader	0.254	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.239	1.91	1.91
20 TO 25 MT (CAT 320,321)	0.378	1.51	6.05
30 TO 35 MT (CAT 328,329)	0.205	0.00	1.64
40 - 48" Single Drum / Smooth / Vibro	0.365	0.00	11.67
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	8.95
Plate Compactor	0.026	0.21	0.00
Rough Terrain Crane 70-79 Ton	0.253	0.00	1.26
Rough Terrain Crane 80-89 Ton	0.253	0.00	1.26
Rough Terrain Crane 90-99 Ton	0.253	0.00	2.53
Rough Terrain Crane 90-99 Ton	0.253	0.00	1.26
Rough Terrain Crane 100-110 Ton	0.253	0.00	1.26
Carry Deck Crane <15 Ton	0.323	0.00	1.61
Carry Deck Crane >15 Ton	0.323	0.00	1.61
Crane Hyd/C 130-150 Ton	0.253	0.00	0.00
Crane Hyd/C 265 Ton	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	0.00	4.65
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	1.16
375 CFM Air Compressor - Diesel	0.116	0.00	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	0.00	2.15
1 - 24 KW Generator	0.206	8.24	4.12
Portable Light Plant - Moon Glo's	0.226	27.12	11.30
Road Broom	0.280	0.00	1.40
Road Broom	0.280	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.395	0.00	7.90
Cat 966, JA744, WA500, L150 Loader	0.205	2.05	2.05
Skid Steer-Wheeled	0.210	0.00	0.00
Skid Steer - Track	0.210	3.14	4.19
Rough Terrain Scissor Lift	0.097	0.97	0.00
40' Manlift	0.097	0.00	0.97
40' Manlift	0.097	3.90	1.95
60' Manlift	0.097	0.00	1.95
80' Manlift	0.097	0.00	0.97
120' Manlift	0.097	0.00	0.00
135' Manlift	0.097	0.00	0.00
150' Manlift	0.097	0.00	0.00
Forklift	0.274	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	1.67
30,000 lb and Greater Straight Mast	0.334	0.00	0.00
6,000 - 8,000 lb Extendable	0.348	0.00	0.00
9,000 - 10,000 lb Extendable	0.274	0.00	2.74
9,000 - 10,000 lb Extendable	0.274	0.00	8.23
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	3.15
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	3.15
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	3.15
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	0.00	1.92
Fusion Machine >36" Ips	0.365	0.00	1.83
Total		52.21	118.18

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
NOX (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.99	0.66
Cat 14 Grader	0.198	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.53	0.53
20 TO 25 MT (CAT 320,321)	0.116	0.46	1.85
30 TO 35 MT (CAT 328,329)	0.198	0.00	1.59
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	1.59
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	6.30
Plate Compactor	0.031	0.25	0.00
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.99
Rough Terrain Crane 80-89 Ton	0.198	0.00	0.99
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.98
Rough Terrain Crane 90-99 Ton	0.198	0.00	0.99
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.99
Carry Deck Crane <15 Ton	0.116	0.00	0.58
Carry Deck Crane >15 Ton	0.116	0.00	0.58
Crane Hyd/C 130-150 Ton	0.198	0.00	0.00
Crane Hyd/C 265 Ton	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	0.00	3.66
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.92
375 CFM Air Compressor - Diesel	0.092	0.00	0.00
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	0.00	3.36
1 - 24 KW Generator	0.126	5.06	2.53
Portable Light Plant - Moon Glo's	0.054	6.45	2.69
Road Broom	0.050	0.00	0.25
Road Broom	0.050	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	2.31
Cat 966, JA744, WA500, L150 Loader	0.198	1.98	1.98
Skid Steer-Wheeled	0.066	0.00	0.00
Skid Steer - Track	0.066	0.99	1.32
Rough Terrain Scissor Lift	0.091	0.91	0.00
40' Manlift	0.091	0.00	0.91
40' Manlift	0.091	3.64	1.82
60' Manlift	0.091	0.00	1.82
80' Manlift	0.091	0.00	0.91
120' Manlift	0.091	0.00	0.00
135' Manlift	0.091	0.00	0.00
150' Manlift	0.091	0.00	0.00
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.58
30,000 lb and Greater Straight Mast	0.116	0.00	0.00
6,000 - 8,000 lb Extendable	0.050	0.00	0.00
9,000 - 10,000 lb Extendable	0.066	0.00	0.66
9,000 - 10,000 lb Extendable	0.066	0.00	1.98
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	2.17
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	2.17
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	2.17
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.50
Fusion Machine >36" Ips	0.116	0.00	0.58
Total		21.27	58.89

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
SOx (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.01
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.01
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.01
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.00
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.00
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00
Crane Hyd/C 265 Ton	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.00	0.01
1 - 24 KW Generator	0.000	0.01	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.01
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.01
Cat 966, JA744, WA500, L150 Loader	0.001	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.01
Rough Terrain Scissor Lift	0.000	0.00	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.00
60' Manlift	0.000	0.00	0.00
80' Manlift	0.000	0.00	0.00
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.06	0.17

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
PM10 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.05	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.03	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.02	0.09
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.07
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.08
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.05
Plate Compactor	0.001	0.01	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.05
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.05
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.10
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.05
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.03
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00
Crane Hyd/C 265 Ton	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.06
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.06
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.12
Cat 966, JA744, WA500, L150 Loader	0.010	0.10	0.10
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.05	0.07
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.02
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.02
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.02
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.02
Fusion Machine >36" Ips	0.006	0.00	0.03
Total		0.54	1.75

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
PM2.5 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.05	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.03	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.02	0.09
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.06
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.08
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.05
Plate Compactor	0.001	0.01	0.00
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.05
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.05
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.10
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.05
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.03
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.00
Crane Hyd/C 265 Ton	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.05
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.06
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.12
Cat 966, JA744, WA500, L150 Loader	0.010	0.10	0.10
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.05	0.07
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.01
60' Manlift	0.001	0.00	0.01
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.00
6,000 - 8,000 lb Extendable	0.002	0.00	0.00
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.02
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.02
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.02
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.02
Fusion Machine >36" Ips	0.006	0.00	0.03
Total		0.53	1.73

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 4	
CO2 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	32.123	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	481.84	321.23
Cat 14 Grader	102.992	0.00	0.00
10-19 MT (SM EX 312 - 318)	35.999	287.99	287.99
20 TO 25 MT (CAT 320,321)	64.917	259.67	1038.68
30 TO 35 MT (CAT 328,329)	97.247	0.00	777.98
40 - 48" Single Drum / Smooth / Vibro	30.474	0.00	975.17
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	485.12
Plate Compactor	4.310	34.48	0.00
Rough Terrain Crane 70-79 Ton	73.881	0.00	369.41
Rough Terrain Crane 80-89 Ton	73.881	0.00	369.41
Rough Terrain Crane 90-99 Ton	73.881	0.00	738.81
Rough Terrain Crane 90-99 Ton	73.881	0.00	369.41
Rough Terrain Crane 100-110 Ton	73.881	0.00	369.41
Carry Deck Crane <15 Ton	49.104	0.00	245.52
Carry Deck Crane >15 Ton	49.104	0.00	245.52
Crane Hyd/C 130-150 Ton	73.881	0.00	0.00
Crane Hyd/C 265 Ton	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	0.00	786.32
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	196.58
375 CFM Air Compressor - Diesel	19.658	0.00	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	0.00	428.88
1 - 24 KW Generator	20.059	802.37	401.18
Portable Light Plant - Moon Glo's	6.906	828.66	345.28
Road Broom	38.704	0.00	193.52
Road Broom	38.704	0.00	0.00
Cat IT28, 928, 930, 938 Loader	63.020	0.00	1260.40
Cat 966, JA744, WA500, L150 Loader	87.614	876.14	876.14
Skid Steer-Wheeled	32.123	0.00	0.00
Skid Steer - Track	32.123	481.84	642.46
Rough Terrain Scissor Lift	18.396	183.96	0.00
40' Manlift	18.396	0.00	183.96
40' Manlift	18.396	735.84	367.92
60' Manlift	18.396	0.00	367.92
80' Manlift	18.396	0.00	183.96
120' Manlift	18.396	0.00	0.00
135' Manlift	18.396	0.00	0.00
150' Manlift	18.396	0.00	0.00
Forklift	45.074	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	293.21
30,000 lb and Greater Straight Mast	58.643	0.00	0.00
6,000 - 8,000 lb Extendable	31.041	0.00	0.00
9,000 - 10,000 lb Extendable	45.074	0.00	450.74
9,000 - 10,000 lb Extendable	45.074	0.00	1352.22
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	165.83
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	165.83
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	165.83
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.423	0.00	284.23
Fusion Machine >36" Ips	59.106	0.00	295.53
Total		4972.80	17231.30

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 2 Month 4	
Fuel (gal/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	1.428	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	21.41	14.28
Cat 14 Grader	4.577	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	12.80	12.80
20 TO 25 MT (CAT 320,321)	2.885	11.54	46.16
30 TO 35 MT (CAT 328,329)	4.322	0.00	34.58
40 - 48" Single Drum / Smooth / Vibro	1.354	0.00	43.34
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	21.56
Plate Compactor	0.197	1.57	0.00
Rough Terrain Crane 70-79 Ton	3.284	0.00	16.42
Rough Terrain Crane 80-89 Ton	3.284	0.00	16.42
Rough Terrain Crane 90-99 Ton	3.284	0.00	32.84
Rough Terrain Crane 90-99 Ton	3.284	0.00	16.42
Rough Terrain Crane 100-110 Ton	3.284	0.00	16.42
Carry Deck Crane <15 Ton	2.182	0.00	10.91
Carry Deck Crane >15 Ton	2.182	0.00	10.91
Crane Hyd/C 130-150 Ton	3.284	0.00	0.00
Crane Hyd/C 265 Ton	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	0.00	34.95
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	8.74
375 CFM Air Compressor - Diesel	0.874	0.00	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	0.00	19.56
1 - 24 KW Generator	0.892	35.66	17.83
Portable Light Plant - Moon Glo's	0.705	84.61	35.25
Road Broom	1.720	0.00	8.60
Road Broom	1.720	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.801	0.00	56.02
Cat 966, JA744, WA500, L150 Loader	3.894	38.94	38.94
Skid Steer-Wheeled	1.428	0.00	0.00
Skid Steer - Track	1.428	21.41	28.55
Rough Terrain Scissor Lift	0.818	8.18	0.00
40' Manlift	0.818	0.00	8.18
40' Manlift	0.818	32.70	16.35
60' Manlift	0.818	0.00	16.35
80' Manlift	0.818	0.00	8.18
120' Manlift	0.818	0.00	0.00
135' Manlift	0.818	0.00	0.00
150' Manlift	0.818	0.00	0.00
Forklift	2.003	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	13.03
30,000 lb and Greater Straight Mast	2.606	0.00	0.00
6,000 - 8,000 lb Extendable	1.380	0.00	0.00
9,000 - 10,000 lb Extendable	2.003	0.00	20.03
9,000 - 10,000 lb Extendable	2.003	0.00	60.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	7.37
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	7.37
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	7.37
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	0.00	12.63
Fusion Machine >36" Ips	2.627	0.00	13.13
Total		268.83	786.23

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 2 Month 8	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		
Small Loader/Backhoe (Cat 416-Cat 436)	5	3	2
Cat 14 Grader	4		
10-19 MT (SM EX 312 - 318)	4		2
20 TO 25 MT (CAT 320,321)	4		3
30 TO 35 MT (CAT 328,329)	4		
40 - 48" Single Drum / Smooth / Vibro	8		2
78 - 84" Single Drum / Combo / Vibro	8		
Walk Behind Roller (2-Drum) (RAMMEX)	8		2
Plate Compactor	8		4
Rough Terrain Crane 70-79 Ton	5		1
Rough Terrain Crane 80-89 Ton	5		3
Rough Terrain Crane 90-99 Ton	5		2
Rough Terrain Crane 90-99 Ton	5		3
Rough Terrain Crane 100-110 Ton	5		1
Carry Deck Crane <15 Ton	5		1
Carry Deck Crane >15 Ton	5		1
Crane Hyd/C 130-150 Ton	5		1
Crane Hyd/C 265 Ton	5		1
175-225 Ton Lattice Crawler Crane	5		1
175-225 Ton Lattice Crawler Crane	5		
175-225 Ton Lattice Crawler Crane	5		
230-250 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
601- 800 Ton Lattice Crawler Crane	5		
185 CFM Air Compressor - Diesel	10		4
250 - 300 CFM Air Compressor - Diesel	10		1
375 CFM Air Compressor - Diesel	10		
1600 CFM Air Compressor - Diesel	10		
300 - 350 Amp Diesel Welder	10		5
1 - 24 KW Generator	10	4	2
Portable Light Plant - Moon Glo's	10	12	
Road Broom	5		1
Road Broom	5		
Cat IT28, 928, 930, 938 Loader	5		1
Cat 966, JA744, WA500, L150 Loader	5	2	2
Skid Steer-Wheeled	5		
Skid Steer - Track	5	1	4
Rough Terrain Scissor Lift	5	2	
40' Manlift	5		2
40' Manlift	5	8	6
60' Manlift	5		6
80' Manlift	5		4
120' Manlift	5		1
135' Manlift	5		1
150' Manlift	5		1
Forklift	5		
30,000 lb and Greater Straight Mast	5		1
30,000 lb and Greater Straight Mast	5		1
6,000 - 8,000 lb Extendable	5		2
9,000 - 10,000 lb Extendable	5		2
9,000 - 10,000 lb Extendable	5		6
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	5		
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	5		
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	5		
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	5		
Fusion Machine >36" Ips	5		

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
VOC (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.013	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.013	0.20	0.13
Cat 14 Grader	0.060	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.017	0.00	0.14
20 TO 25 MT (CAT 320,321)	0.024	0.00	0.28
30 TO 35 MT (CAT 328,329)	0.028	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.023	0.00	0.37
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	1.30
Plate Compactor	0.004	0.00	0.13
Rough Terrain Crane 70-79 Ton	0.046	0.00	0.23
Rough Terrain Crane 80-89 Ton	0.046	0.00	0.69
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.46
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.69
Rough Terrain Crane 100-110 Ton	0.046	0.00	0.23
Carry Deck Crane <15 Ton	0.042	0.00	0.21
Carry Deck Crane >15 Ton	0.042	0.00	0.21
Crane Hyd/C 130-150 Ton	0.046	0.00	0.23
Crane Hyd/C 265 Ton	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.135	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.00	0.24
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.06
375 CFM Air Compressor - Diesel	0.006	0.00	0.00
1600 CFM Air Compressor - Diesel	0.037	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.00	0.46
1 - 24 KW Generator	0.017	0.69	0.35
Portable Light Plant - Moon Glo's	0.070	8.38	0.00
Road Broom	0.023	0.00	0.12
Road Broom	0.023	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.035	0.00	0.18
Cat 966, JA744, WA500, L150 Loader	0.037	0.37	0.37
Skid Steer-Wheeled	0.013	0.00	0.00
Skid Steer - Track	0.013	0.07	0.26
Rough Terrain Scissor Lift	0.005	0.05	0.00
40' Manlift	0.005	0.00	0.05
40' Manlift	0.005	0.20	0.15
60' Manlift	0.005	0.00	0.15
80' Manlift	0.005	0.00	0.10
120' Manlift	0.005	0.00	0.03
135' Manlift	0.005	0.00	0.03
150' Manlift	0.005	0.00	0.03
Forklift	0.011	0.00	0.00
30,000 lb and Greater Straight Mast	0.028	0.00	0.14
30,000 lb and Greater Straight Mast	0.028	0.00	0.14
6,000 - 8,000 lb Extendable	0.023	0.00	0.23
9,000 - 10,000 lb Extendable	0.011	0.00	0.11
9,000 - 10,000 lb Extendable	0.011	0.00	0.33
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.013	0.00	0.00
Fusion Machine >36" Ips	0.029	0.00	0.00
Total		9.96	10.48

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
CO (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.210	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	3.14	2.10
Cat 14 Grader	0.254	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.239	0.00	1.91
20 TO 25 MT (CAT 320,321)	0.378	0.00	4.54
30 TO 35 MT (CAT 328,329)	0.205	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.365	0.00	5.83
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	3.58
Plate Compactor	0.026	0.00	0.84
Rough Terrain Crane 70-79 Ton	0.253	0.00	1.26
Rough Terrain Crane 80-89 Ton	0.253	0.00	3.79
Rough Terrain Crane 90-99 Ton	0.253	0.00	2.53
Rough Terrain Crane 90-99 Ton	0.253	0.00	3.79
Rough Terrain Crane 100-110 Ton	0.253	0.00	1.26
Carry Deck Crane <15 Ton	0.323	0.00	1.61
Carry Deck Crane >15 Ton	0.323	0.00	1.61
Crane Hyd/C 130-150 Ton	0.253	0.00	1.26
Crane Hyd/C 265 Ton	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	0.00	4.65
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	1.16
375 CFM Air Compressor - Diesel	0.116	0.00	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	0.00	2.15
1 - 24 KW Generator	0.206	8.24	4.12
Portable Light Plant - Moon Glo's	0.226	27.12	0.00
Road Broom	0.280	0.00	1.40
Road Broom	0.280	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.395	0.00	1.98
Cat 966, JA744, WA500, L150 Loader	0.205	2.05	2.05
Skid Steer-Wheeled	0.210	0.00	0.00
Skid Steer - Track	0.210	1.05	4.19
Rough Terrain Scissor Lift	0.097	0.97	0.00
40' Manlift	0.097	0.00	0.97
40' Manlift	0.097	3.90	2.92
60' Manlift	0.097	0.00	2.92
80' Manlift	0.097	0.00	1.95
120' Manlift	0.097	0.00	0.49
135' Manlift	0.097	0.00	0.49
150' Manlift	0.097	0.00	0.49
Forklift	0.274	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	1.67
30,000 lb and Greater Straight Mast	0.334	0.00	1.67
6,000 - 8,000 lb Extendable	0.348	0.00	3.48
9,000 - 10,000 lb Extendable	0.274	0.00	2.74
9,000 - 10,000 lb Extendable	0.274	0.00	8.23
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	0.00	0.00
Fusion Machine >36" Ips	0.365	0.00	0.00
Total		46.48	98.94

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
NOX (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.066	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.99	0.66
Cat 14 Grader	0.198	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.53
20 TO 25 MT (CAT 320,321)	0.116	0.00	1.39
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.79
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	2.52
Plate Compactor	0.031	0.00	1.01
Rough Terrain Crane 70-79 Ton	0.198	0.00	0.99
Rough Terrain Crane 80-89 Ton	0.198	0.00	2.98
Rough Terrain Crane 90-99 Ton	0.198	0.00	1.98
Rough Terrain Crane 90-99 Ton	0.198	0.00	2.98
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.99
Carry Deck Crane <15 Ton	0.116	0.00	0.58
Carry Deck Crane >15 Ton	0.116	0.00	0.58
Crane Hyd/C 130-150 Ton	0.198	0.00	0.99
Crane Hyd/C 265 Ton	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	0.00	3.66
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	0.92
375 CFM Air Compressor - Diesel	0.092	0.00	0.00
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	0.00	3.36
1 - 24 KW Generator	0.126	5.06	2.53
Portable Light Plant - Moon Glo's	0.054	6.45	0.00
Road Broom	0.050	0.00	0.25
Road Broom	0.050	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.58
Cat 966, JA744, WA500, L150 Loader	0.198	1.98	1.98
Skid Steer-Wheeled	0.066	0.00	0.00
Skid Steer - Track	0.066	0.33	1.32
Rough Terrain Scissor Lift	0.091	0.91	0.00
40' Manlift	0.091	0.00	0.91
40' Manlift	0.091	3.64	2.73
60' Manlift	0.091	0.00	2.73
80' Manlift	0.091	0.00	1.82
120' Manlift	0.091	0.00	0.46
135' Manlift	0.091	0.00	0.46
150' Manlift	0.091	0.00	0.46
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.58
30,000 lb and Greater Straight Mast	0.116	0.00	0.58
6,000 - 8,000 lb Extendable	0.050	0.00	0.50
9,000 - 10,000 lb Extendable	0.066	0.00	0.66
9,000 - 10,000 lb Extendable	0.066	0.00	1.98
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00
Fusion Machine >36" Ips	0.116	0.00	0.00
Total		19.37	59.33

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
SOx (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.01
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.00
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.00	0.00
Crane Hyd/C 265 Ton	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.00	0.01
1 - 24 KW Generator	0.000	0.01	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.01	0.01
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.01
Rough Terrain Scissor Lift	0.000	0.00	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.01
60' Manlift	0.000	0.00	0.01
80' Manlift	0.000	0.00	0.00
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.05	0.18

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
PM10 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.05	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.02
Plate Compactor	0.001	0.00	0.04
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.05
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.10
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.03
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.05
Crane Hyd/C 265 Ton	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.06
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.00
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.03
Cat 966, JA744, WA500, L150 Loader	0.010	0.10	0.10
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.02	0.07
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.02
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.45	2.11

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
PM2.5 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.05	0.03
Cat 14 Grader	0.010	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.03
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.07
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.04
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.02
Plate Compactor	0.001	0.00	0.04
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.05
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.10
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.00	0.03
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.00	0.05
Crane Hyd/C 265 Ton	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.05
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.01
375 CFM Air Compressor - Diesel	0.001	0.00	0.00
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.00	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.00
Road Broom	0.002	0.00	0.01
Road Broom	0.002	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.03
Cat 966, JA744, WA500, L150 Loader	0.010	0.10	0.10
Skid Steer-Wheeled	0.003	0.00	0.00
Skid Steer - Track	0.003	0.02	0.07
Rough Terrain Scissor Lift	0.001	0.01	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.02
60' Manlift	0.001	0.00	0.02
80' Manlift	0.001	0.00	0.01
120' Manlift	0.001	0.00	0.00
135' Manlift	0.001	0.00	0.00
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.44	2.09

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 8	
CO2 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	32.123	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	481.84	321.23
Cat 14 Grader	102.992	0.00	0.00
10-19 MT (SM EX 312 - 318)	35.999	0.00	287.99
20 TO 25 MT (CAT 320,321)	64.917	0.00	779.01
30 TO 35 MT (CAT 328,329)	97.247	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.474	0.00	487.58
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	194.05
Plate Compactor	4.310	0.00	137.92
Rough Terrain Crane 70-79 Ton	73.881	0.00	369.41
Rough Terrain Crane 80-89 Ton	73.881	0.00	1108.22
Rough Terrain Crane 90-99 Ton	73.881	0.00	738.81
Rough Terrain Crane 90-99 Ton	73.881	0.00	1108.22
Rough Terrain Crane 100-110 Ton	73.881	0.00	369.41
Carry Deck Crane <15 Ton	49.104	0.00	245.52
Carry Deck Crane >15 Ton	49.104	0.00	245.52
Crane Hyd/C 130-150 Ton	73.881	0.00	369.41
Crane Hyd/C 265 Ton	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	0.00	786.32
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	196.58
375 CFM Air Compressor - Diesel	19.658	0.00	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	0.00	428.88
1 - 24 KW Generator	20.059	802.37	401.18
Portable Light Plant - Moon Glo's	6.906	828.66	0.00
Road Broom	38.704	0.00	193.52
Road Broom	38.704	0.00	0.00
Cat IT28, 928, 930, 938 Loader	63.020	0.00	315.10
Cat 966, JA744, WA500, L150 Loader	87.614	876.14	876.14
Skid Steer-Wheeled	32.123	0.00	0.00
Skid Steer - Track	32.123	160.61	642.46
Rough Terrain Scissor Lift	18.396	183.96	0.00
40' Manlift	18.396	0.00	183.96
40' Manlift	18.396	735.84	551.88
60' Manlift	18.396	0.00	551.88
80' Manlift	18.396	0.00	367.92
120' Manlift	18.396	0.00	91.98
135' Manlift	18.396	0.00	91.98
150' Manlift	18.396	0.00	91.98
Forklift	45.074	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	293.21
30,000 lb and Greater Straight Mast	58.643	0.00	293.21
6,000 - 8,000 lb Extendable	31.041	0.00	310.41
9,000 - 10,000 lb Extendable	45.074	0.00	450.74
9,000 - 10,000 lb Extendable	45.074	0.00	1352.22
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	11.055	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	11.055	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	11.055	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	28.423	0.00	0.00
Fusion Machine >36" Ips	59.106	0.00	0.00
Total		4069.43	18923.06

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 2 Month 8	
Fuel (gal/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	1.428	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	21.41	14.28
Cat 14 Grader	4.577	0.00	0.00
10-19 MT (SM EX 312 - 318)	1.600	0.00	12.80
20 TO 25 MT (CAT 320,321)	2.885	0.00	34.62
30 TO 35 MT (CAT 328,329)	4.322	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.354	0.00	21.67
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	8.62
Plate Compactor	0.197	0.00	6.30
Rough Terrain Crane 70-79 Ton	3.284	0.00	16.42
Rough Terrain Crane 80-89 Ton	3.284	0.00	49.25
Rough Terrain Crane 90-99 Ton	3.284	0.00	32.84
Rough Terrain Crane 90-99 Ton	3.284	0.00	49.25
Rough Terrain Crane 100-110 Ton	3.284	0.00	16.42
Carry Deck Crane <15 Ton	2.182	0.00	10.91
Carry Deck Crane >15 Ton	2.182	0.00	10.91
Crane Hyd/C 130-150 Ton	3.284	0.00	16.42
Crane Hyd/C 265 Ton	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	0.00	34.95
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	8.74
375 CFM Air Compressor - Diesel	0.874	0.00	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	0.00	19.56
1 - 24 KW Generator	0.892	35.66	17.83
Portable Light Plant - Moon Glo's	0.705	84.61	0.00
Road Broom	1.720	0.00	8.60
Road Broom	1.720	0.00	0.00
Cat IT28, 928, 930, 938 Loader	2.801	0.00	14.00
Cat 966, JA744, WA500, L150 Loader	3.894	38.94	38.94
Skid Steer-Wheeled	1.428	0.00	0.00
Skid Steer - Track	1.428	7.14	28.55
Rough Terrain Scissor Lift	0.818	8.18	0.00
40' Manlift	0.818	0.00	8.18
40' Manlift	0.818	32.70	24.53
60' Manlift	0.818	0.00	24.53
80' Manlift	0.818	0.00	16.35
120' Manlift	0.818	0.00	4.09
135' Manlift	0.818	0.00	4.09
150' Manlift	0.818	0.00	4.09
Forklift	2.003	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	13.03
30,000 lb and Greater Straight Mast	2.606	0.00	13.03
6,000 - 8,000 lb Extendable	1.380	0.00	13.80
9,000 - 10,000 lb Extendable	2.003	0.00	20.03
9,000 - 10,000 lb Extendable	2.003	0.00	60.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	0.00	0.00
Fusion Machine >36" Ips	2.627	0.00	0.00
Total		228.64	841.68

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

		Year 2 Month 12	
Equipment (Pieces per Day)	**Hours (hr/day)**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	4		1
Small Loader/Backhoe (Cat 416-Cat 436)	5	1	1
Cat 14 Grader	4		1
10-19 MT (SM EX 312 - 318)	4		
20 TO 25 MT (CAT 320,321)	4		
30 TO 35 MT (CAT 328,329)	4		
40 - 48" Single Drum / Smooth / Vibro	8		1
78 - 84" Single Drum / Combo / Vibro	8		1
Walk Behind Roller (2-Drum) (RAMMEX)	8		1
Plate Compactor	8		1
Rough Terrain Crane 70-79 Ton	5		3
Rough Terrain Crane 80-89 Ton	5		3
Rough Terrain Crane 90-99 Ton	5		4
Rough Terrain Crane 90-99 Ton	5		3
Rough Terrain Crane 100-110 Ton	5		1
Carry Deck Crane <15 Ton	5	2	2
Carry Deck Crane >15 Ton	5		1
Crane Hyd/C 130-150 Ton	5	5	3
Crane Hyd/C 265 Ton	5		1
175-225 Ton Lattice Crawler Crane	5		1
175-225 Ton Lattice Crawler Crane	5		1
175-225 Ton Lattice Crawler Crane	5		
230-250 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		
300-330 Ton Lattice Crawler Crane	5		1
300-330 Ton Lattice Crawler Crane	5		
601- 800 Ton Lattice Crawler Crane	5		
185 CFM Air Compressor - Diesel	10		8
250 - 300 CFM Air Compressor - Diesel	10		2
375 CFM Air Compressor - Diesel	10	2	
1600 CFM Air Compressor - Diesel	10		
300 - 350 Amp Diesel Welder	10	10	5
1 - 24 KW Generator	10	4	2
Portable Light Plant - Moon Glo's	10	12	
Road Broom	5		
Road Broom	5		1
Cat IT28, 928, 930, 938 Loader	5		
Cat 966, JA744, WA500, L150 Loader	5	1	1
Skid Steer-Wheeled	5	1	1
Skid Steer - Track	5	1	1
Rough Terrain Scissor Lift	5	6	
40' Manlift	5		2
40' Manlift	5	8	10
60' Manlift	5	4	8
80' Manlift	5		6
120' Manlift	5		2
135' Manlift	5		2
150' Manlift	5		1
Forklift	5		
30,000 lb and Greater Straight Mast	5		1
30,000 lb and Greater Straight Mast	5		1
6,000 - 8,000 lb Extendable	5		2
9,000 - 10,000 lb Extendable	5		2
9,000 - 10,000 lb Extendable	5		6
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	5		
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	5		
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	5		
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	5		
Fusion Machine >36" Ips	5		

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
VOC (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.013	0.00	0.05
Small Loader/Backhoe (Cat 416-Cat 436)	0.013	0.07	0.07
Cat 14 Grader	0.060	0.00	0.24
10-19 MT (SM EX 312 - 318)	0.017	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.024	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.028	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.023	0.00	0.19
78 - 84" Single Drum / Combo / Vibro	0.023	0.00	0.19
Walk Behind Roller (2-Drum) (RAMMEX)	0.081	0.00	0.65
Plate Compactor	0.004	0.00	0.03
Rough Terrain Crane 70-79 Ton	0.046	0.00	0.69
Rough Terrain Crane 80-89 Ton	0.046	0.00	0.69
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.92
Rough Terrain Crane 90-99 Ton	0.046	0.00	0.69
Rough Terrain Crane 100-110 Ton	0.046	0.00	0.23
Carry Deck Crane <15 Ton	0.042	0.42	0.42
Carry Deck Crane >15 Ton	0.042	0.00	0.21
Crane Hyd/C 130-150 Ton	0.046	1.15	0.69
Crane Hyd/C 265 Ton	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.28
175-225 Ton Lattice Crawler Crane	0.055	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.28
300-330 Ton Lattice Crawler Crane	0.055	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.135	0.00	0.00
185 CFM Air Compressor - Diesel	0.006	0.00	0.49
250 - 300 CFM Air Compressor - Diesel	0.006	0.00	0.12
375 CFM Air Compressor - Diesel	0.006	0.12	0.00
1600 CFM Air Compressor - Diesel	0.037	0.00	0.00
300 - 350 Amp Diesel Welder	0.009	0.91	0.46
1 - 24 KW Generator	0.017	0.69	0.35
Portable Light Plant - Moon Glo's	0.070	8.38	0.00
Road Broom	0.023	0.00	0.00
Road Broom	0.023	0.00	0.12
Cat IT28, 928, 930, 938 Loader	0.035	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.037	0.19	0.19
Skid Steer-Wheeled	0.013	0.07	0.07
Skid Steer - Track	0.013	0.07	0.07
Rough Terrain Scissor Lift	0.005	0.15	0.00
40' Manlift	0.005	0.00	0.05
40' Manlift	0.005	0.20	0.25
60' Manlift	0.005	0.10	0.20
80' Manlift	0.005	0.00	0.15
120' Manlift	0.005	0.00	0.05
135' Manlift	0.005	0.00	0.05
150' Manlift	0.005	0.00	0.03
Forklift	0.011	0.00	0.00
30,000 lb and Greater Straight Mast	0.028	0.00	0.14
30,000 lb and Greater Straight Mast	0.028	0.00	0.14
6,000 - 8,000 lb Extendable	0.023	0.00	0.23
9,000 - 10,000 lb Extendable	0.011	0.00	0.11
9,000 - 10,000 lb Extendable	0.011	0.00	0.33
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.076	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.076	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.076	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.013	0.00	0.00
Fusion Machine >36" Ips	0.029	0.00	0.00
Total		12.52	11.75

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
CO (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.210	0.00	0.84
Small Loader/Backhoe (Cat 416-Cat 436)	0.210	1.05	1.05
Cat 14 Grader	0.254	0.00	1.02
10-19 MT (SM EX 312 - 318)	0.239	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.378	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.205	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.365	0.00	2.92
78 - 84" Single Drum / Combo / Vibro	0.365	0.00	2.92
Walk Behind Roller (2-Drum) (RAMMEX)	0.224	0.00	1.79
Plate Compactor	0.026	0.00	0.21
Rough Terrain Crane 70-79 Ton	0.253	0.00	3.79
Rough Terrain Crane 80-89 Ton	0.253	0.00	3.79
Rough Terrain Crane 90-99 Ton	0.253	0.00	5.06
Rough Terrain Crane 90-99 Ton	0.253	0.00	3.79
Rough Terrain Crane 100-110 Ton	0.253	0.00	1.26
Carry Deck Crane <15 Ton	0.323	3.23	3.23
Carry Deck Crane >15 Ton	0.323	0.00	1.61
Crane Hyd/C 130-150 Ton	0.253	6.32	3.79
Crane Hyd/C 265 Ton	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	2.21
175-225 Ton Lattice Crawler Crane	0.443	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.443	0.00	2.21
300-330 Ton Lattice Crawler Crane	0.443	0.00	0.00
601- 800 Ton Lattice Crawler Crane	1.053	0.00	0.00
185 CFM Air Compressor - Diesel	0.116	0.00	9.31
250 - 300 CFM Air Compressor - Diesel	0.116	0.00	2.33
375 CFM Air Compressor - Diesel	0.116	2.33	0.00
1600 CFM Air Compressor - Diesel	0.369	0.00	0.00
300 - 350 Amp Diesel Welder	0.043	4.30	2.15
1 - 24 KW Generator	0.206	8.24	4.12
Portable Light Plant - Moon Glo's	0.226	27.12	0.00
Road Broom	0.280	0.00	0.00
Road Broom	0.280	0.00	1.40
Cat IT28, 928, 930, 938 Loader	0.395	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.205	1.03	1.03
Skid Steer-Wheeled	0.210	1.05	1.05
Skid Steer - Track	0.210	1.05	1.05
Rough Terrain Scissor Lift	0.097	2.92	0.00
40' Manlift	0.097	0.00	0.97
40' Manlift	0.097	3.90	4.87
60' Manlift	0.097	1.95	3.90
80' Manlift	0.097	0.00	2.92
120' Manlift	0.097	0.00	0.97
135' Manlift	0.097	0.00	0.97
150' Manlift	0.097	0.00	0.49
Forklift	0.274	0.00	0.00
30,000 lb and Greater Straight Mast	0.334	0.00	1.67
30,000 lb and Greater Straight Mast	0.334	0.00	1.67
6,000 - 8,000 lb Extendable	0.348	0.00	3.48
9,000 - 10,000 lb Extendable	0.274	0.00	2.74
9,000 - 10,000 lb Extendable	0.274	0.00	8.23
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.210	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.210	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.210	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.192	0.00	0.00
Fusion Machine >36" Ips	0.365	0.00	0.00
Total		64.48	110.09

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
NOX (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.066	0.00	0.26
Small Loader/Backhoe (Cat 416-Cat 436)	0.066	0.33	0.33
Cat 14 Grader	0.198	0.00	0.79
10-19 MT (SM EX 312 - 318)	0.066	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.116	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.198	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.050	0.00	0.40
78 - 84" Single Drum / Combo / Vibro	0.050	0.00	0.40
Walk Behind Roller (2-Drum) (RAMMEX)	0.157	0.00	1.26
Plate Compactor	0.031	0.00	0.25
Rough Terrain Crane 70-79 Ton	0.198	0.00	2.98
Rough Terrain Crane 80-89 Ton	0.198	0.00	2.98
Rough Terrain Crane 90-99 Ton	0.198	0.00	3.97
Rough Terrain Crane 90-99 Ton	0.198	0.00	2.98
Rough Terrain Crane 100-110 Ton	0.198	0.00	0.99
Carry Deck Crane <15 Ton	0.116	1.16	1.16
Carry Deck Crane >15 Ton	0.116	0.00	0.58
Crane Hyd/C 130-150 Ton	0.198	4.96	2.98
Crane Hyd/C 265 Ton	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	1.98
175-225 Ton Lattice Crawler Crane	0.397	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.397	0.00	1.98
300-330 Ton Lattice Crawler Crane	0.397	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.496	0.00	0.00
185 CFM Air Compressor - Diesel	0.092	0.00	7.32
250 - 300 CFM Air Compressor - Diesel	0.092	0.00	1.83
375 CFM Air Compressor - Diesel	0.092	1.83	0.00
1600 CFM Air Compressor - Diesel	0.282	0.00	0.00
300 - 350 Amp Diesel Welder	0.067	6.72	3.36
1 - 24 KW Generator	0.126	5.06	2.53
Portable Light Plant - Moon Glo's	0.054	6.45	0.00
Road Broom	0.050	0.00	0.00
Road Broom	0.050	0.00	0.25
Cat IT28, 928, 930, 938 Loader	0.116	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.198	0.99	0.99
Skid Steer-Wheeled	0.066	0.33	0.33
Skid Steer - Track	0.066	0.33	0.33
Rough Terrain Scissor Lift	0.091	2.73	0.00
40' Manlift	0.091	0.00	0.91
40' Manlift	0.091	3.64	4.55
60' Manlift	0.091	1.82	3.64
80' Manlift	0.091	0.00	2.73
120' Manlift	0.091	0.00	0.91
135' Manlift	0.091	0.00	0.91
150' Manlift	0.091	0.00	0.46
Forklift	0.066	0.00	0.00
30,000 lb and Greater Straight Mast	0.116	0.00	0.58
30,000 lb and Greater Straight Mast	0.116	0.00	0.58
6,000 - 8,000 lb Extendable	0.050	0.00	0.50
9,000 - 10,000 lb Extendable	0.066	0.00	0.66
9,000 - 10,000 lb Extendable	0.066	0.00	1.98
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.145	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.145	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.145	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.050	0.00	0.00
Fusion Machine >36" Ips	0.116	0.00	0.00
Total		36.36	73.53

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
SOx (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.000	0.00	0.00
Small Loader/Backhoe (Cat 416-Cat 436)	0.000	0.00	0.00
Cat 14 Grader	0.001	0.00	0.00
10-19 MT (SM EX 312 - 318)	0.000	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.001	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.001	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.000	0.00	0.00
78 - 84" Single Drum / Combo / Vibro	0.000	0.00	0.00
Walk Behind Roller (2-Drum) (RAMMEX)	0.000	0.00	0.00
Plate Compactor	0.000	0.00	0.00
Rough Terrain Crane 70-79 Ton	0.001	0.00	0.01
Rough Terrain Crane 80-89 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 90-99 Ton	0.001	0.00	0.01
Rough Terrain Crane 100-110 Ton	0.001	0.00	0.00
Carry Deck Crane <15 Ton	0.000	0.00	0.00
Carry Deck Crane >15 Ton	0.000	0.00	0.00
Crane Hyd/C 130-150 Ton	0.001	0.02	0.01
Crane Hyd/C 265 Ton	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.01
175-225 Ton Lattice Crawler Crane	0.001	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.01
300-330 Ton Lattice Crawler Crane	0.001	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.002	0.00	0.00
185 CFM Air Compressor - Diesel	0.000	0.00	0.01
250 - 300 CFM Air Compressor - Diesel	0.000	0.00	0.00
375 CFM Air Compressor - Diesel	0.000	0.00	0.00
1600 CFM Air Compressor - Diesel	0.002	0.00	0.00
300 - 350 Amp Diesel Welder	0.000	0.01	0.01
1 - 24 KW Generator	0.000	0.01	0.00
Portable Light Plant - Moon Glo's	0.000	0.02	0.00
Road Broom	0.000	0.00	0.00
Road Broom	0.000	0.00	0.00
Cat IT28, 928, 930, 938 Loader	0.001	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.001	0.00	0.00
Skid Steer-Wheeled	0.000	0.00	0.00
Skid Steer - Track	0.000	0.00	0.00
Rough Terrain Scissor Lift	0.000	0.01	0.00
40' Manlift	0.000	0.00	0.00
40' Manlift	0.000	0.01	0.01
60' Manlift	0.000	0.00	0.01
80' Manlift	0.000	0.00	0.01
120' Manlift	0.000	0.00	0.00
135' Manlift	0.000	0.00	0.00
150' Manlift	0.000	0.00	0.00
Forklift	0.000	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
30,000 lb and Greater Straight Mast	0.001	0.00	0.00
6,000 - 8,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.00
9,000 - 10,000 lb Extendable	0.000	0.00	0.01
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.000	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.000	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.000	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.000	0.00	0.00
Fusion Machine >36" Ips	0.001	0.00	0.00
Total		0.09	0.21

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
PM10 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.01
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.02	0.02
Cat 14 Grader	0.010	0.00	0.04
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.02
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.02
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.01
Plate Compactor	0.001	0.00	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.15
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.20
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.06	0.06
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.25	0.15
Crane Hyd/C 265 Ton	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.11
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.03
375 CFM Air Compressor - Diesel	0.001	0.03	0.00
1600 CFM Air Compressor - Diesel	0.012	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.12	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.00
Road Broom	0.002	0.00	0.00
Road Broom	0.002	0.00	0.01
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.05	0.05
Skid Steer-Wheeled	0.003	0.02	0.02
Skid Steer - Track	0.003	0.02	0.02
Rough Terrain Scissor Lift	0.001	0.02	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.04
60' Manlift	0.001	0.02	0.03
80' Manlift	0.001	0.00	0.02
120' Manlift	0.001	0.00	0.01
135' Manlift	0.001	0.00	0.01
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.86	2.53

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
PM2.5 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	0.003	0.00	0.01
Small Loader/Backhoe (Cat 416-Cat 436)	0.003	0.02	0.02
Cat 14 Grader	0.010	0.00	0.04
10-19 MT (SM EX 312 - 318)	0.003	0.00	0.00
20 TO 25 MT (CAT 320,321)	0.006	0.00	0.00
30 TO 35 MT (CAT 328,329)	0.008	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	0.002	0.00	0.02
78 - 84" Single Drum / Combo / Vibro	0.002	0.00	0.02
Walk Behind Roller (2-Drum) (RAMMEX)	0.001	0.00	0.01
Plate Compactor	0.001	0.00	0.01
Rough Terrain Crane 70-79 Ton	0.010	0.00	0.15
Rough Terrain Crane 80-89 Ton	0.010	0.00	0.15
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.20
Rough Terrain Crane 90-99 Ton	0.010	0.00	0.15
Rough Terrain Crane 100-110 Ton	0.010	0.00	0.05
Carry Deck Crane <15 Ton	0.006	0.06	0.06
Carry Deck Crane >15 Ton	0.006	0.00	0.03
Crane Hyd/C 130-150 Ton	0.010	0.25	0.15
Crane Hyd/C 265 Ton	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.10
175-225 Ton Lattice Crawler Crane	0.020	0.00	0.00
230-250 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.10
300-330 Ton Lattice Crawler Crane	0.020	0.00	0.00
601- 800 Ton Lattice Crawler Crane	0.025	0.00	0.00
185 CFM Air Compressor - Diesel	0.001	0.00	0.10
250 - 300 CFM Air Compressor - Diesel	0.001	0.00	0.03
375 CFM Air Compressor - Diesel	0.001	0.03	0.00
1600 CFM Air Compressor - Diesel	0.011	0.00	0.00
300 - 350 Amp Diesel Welder	0.001	0.12	0.06
1 - 24 KW Generator	0.002	0.10	0.05
Portable Light Plant - Moon Glo's	0.001	0.15	0.00
Road Broom	0.002	0.00	0.00
Road Broom	0.002	0.00	0.01
Cat IT28, 928, 930, 938 Loader	0.006	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	0.010	0.05	0.05
Skid Steer-Wheeled	0.003	0.02	0.02
Skid Steer - Track	0.003	0.02	0.02
Rough Terrain Scissor Lift	0.001	0.02	0.00
40' Manlift	0.001	0.00	0.01
40' Manlift	0.001	0.03	0.03
60' Manlift	0.001	0.01	0.03
80' Manlift	0.001	0.00	0.02
120' Manlift	0.001	0.00	0.01
135' Manlift	0.001	0.00	0.01
150' Manlift	0.001	0.00	0.00
Forklift	0.003	0.00	0.00
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
30,000 lb and Greater Straight Mast	0.006	0.00	0.03
6,000 - 8,000 lb Extendable	0.002	0.00	0.02
9,000 - 10,000 lb Extendable	0.003	0.00	0.03
9,000 - 10,000 lb Extendable	0.003	0.00	0.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.001	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.001	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.001	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	0.002	0.00	0.00
Fusion Machine >36" Ips	0.006	0.00	0.00
Total		0.86	2.51

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (lb/hr)	Year 2 Month 12	
CO2 (lb/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	32.123	0.00	128.49
Small Loader/Backhoe (Cat 416-Cat 436)	32.123	160.61	160.61
Cat 14 Grader	102.992	0.00	411.97
10-19 MT (SM EX 312 - 318)	35.999	0.00	0.00
20 TO 25 MT (CAT 320,321)	64.917	0.00	0.00
30 TO 35 MT (CAT 328,329)	97.247	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	30.474	0.00	243.79
78 - 84" Single Drum / Combo / Vibro	30.474	0.00	243.79
Walk Behind Roller (2-Drum) (RAMMEX)	12.128	0.00	97.02
Plate Compactor	4.310	0.00	34.48
Rough Terrain Crane 70-79 Ton	73.881	0.00	1108.22
Rough Terrain Crane 80-89 Ton	73.881	0.00	1108.22
Rough Terrain Crane 90-99 Ton	73.881	0.00	1477.62
Rough Terrain Crane 90-99 Ton	73.881	0.00	1108.22
Rough Terrain Crane 100-110 Ton	73.881	0.00	369.41
Carry Deck Crane <15 Ton	49.104	491.04	491.04
Carry Deck Crane >15 Ton	49.104	0.00	245.52
Crane Hyd/C 130-150 Ton	73.881	1847.03	1108.22
Crane Hyd/C 265 Ton	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	614.87
175-225 Ton Lattice Crawler Crane	122.974	0.00	0.00
230-250 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
300-330 Ton Lattice Crawler Crane	122.974	0.00	614.87
300-330 Ton Lattice Crawler Crane	122.974	0.00	0.00
601- 800 Ton Lattice Crawler Crane	211.976	0.00	0.00
185 CFM Air Compressor - Diesel	19.658	0.00	1572.64
250 - 300 CFM Air Compressor - Diesel	19.658	0.00	393.16
375 CFM Air Compressor - Diesel	19.658	393.16	0.00
1600 CFM Air Compressor - Diesel	193.595	0.00	0.00
300 - 350 Amp Diesel Welder	8.578	857.77	428.88
1 - 24 KW Generator	20.059	802.37	401.18
Portable Light Plant - Moon Glo's	6.906	828.66	0.00
Road Broom	38.704	0.00	0.00
Road Broom	38.704	0.00	193.52
Cat IT28, 928, 930, 938 Loader	63.020	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	87.614	438.07	438.07
Skid Steer-Wheeled	32.123	160.61	160.61
Skid Steer - Track	32.123	160.61	160.61
Rough Terrain Scissor Lift	18.396	551.88	0.00
40' Manlift	18.396	0.00	183.96
40' Manlift	18.396	735.84	919.80
60' Manlift	18.396	367.92	735.84
80' Manlift	18.396	0.00	551.88
120' Manlift	18.396	0.00	183.96
135' Manlift	18.396	0.00	183.96
150' Manlift	18.396	0.00	91.98
Forklift	45.074	0.00	0.00
30,000 lb and Greater Straight Mast	58.643	0.00	293.21
30,000 lb and Greater Straight Mast	58.643	0.00	293.21
6,000 - 8,000 lb Extendable	31.041	0.00	310.41
9,000 - 10,000 lb Extendable	45.074	0.00	450.74
9,000 - 10,000 lb Extendable	45.074	0.00	1352.22
Fusion Mach 2"lps-8"Dips (Tracstar 28)	11.055	0.00	0.00
Fusion Mach 4"lps-12"Dips (Tracstar 412)	11.055	0.00	0.00
Fusion Mach 6"lps-18"Dips (Tracstar 618)	11.055	0.00	0.00
Fusion Mach 12"lps-36"Dips(Tracstar 900)	28.423	0.00	0.00
Fusion Machine >36" lps	59.106	0.00	0.00
Total		7795.58	22555.45

Exhibit A
AltAir Renewable Fuels Project

Construction Equipment Emissions

	Emission Rate (gal/hr)	Year 2 Month 12	
Fuel (gal/day)	**2022**	**Hydrogen Plant**	**Unit B**
JD-210, Case 580 - Box Blades	1.428	0.00	5.71
Small Loader/Backhoe (Cat 416-Cat 436)	1.428	7.14	7.14
Cat 14 Grader	4.577	0.00	18.31
10-19 MT (SM EX 312 - 318)	1.600	0.00	0.00
20 TO 25 MT (CAT 320,321)	2.885	0.00	0.00
30 TO 35 MT (CAT 328,329)	4.322	0.00	0.00
40 - 48" Single Drum / Smooth / Vibro	1.354	0.00	10.84
78 - 84" Single Drum / Combo / Vibro	1.354	0.00	10.84
Walk Behind Roller (2-Drum) (RAMMEX)	0.539	0.00	4.31
Plate Compactor	0.197	0.00	1.57
Rough Terrain Crane 70-79 Ton	3.284	0.00	49.25
Rough Terrain Crane 80-89 Ton	3.284	0.00	49.25
Rough Terrain Crane 90-99 Ton	3.284	0.00	65.67
Rough Terrain Crane 90-99 Ton	3.284	0.00	49.25
Rough Terrain Crane 100-110 Ton	3.284	0.00	16.42
Carry Deck Crane <15 Ton	2.182	21.82	21.82
Carry Deck Crane >15 Ton	2.182	0.00	10.91
Crane Hyd/C 130-150 Ton	3.284	82.09	49.25
Crane Hyd/C 265 Ton	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	27.33
175-225 Ton Lattice Crawler Crane	5.465	0.00	0.00
230-250 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
300-330 Ton Lattice Crawler Crane	5.465	0.00	27.33
300-330 Ton Lattice Crawler Crane	5.465	0.00	0.00
601- 800 Ton Lattice Crawler Crane	9.421	0.00	0.00
185 CFM Air Compressor - Diesel	0.874	0.00	69.89
250 - 300 CFM Air Compressor - Diesel	0.874	0.00	17.47
375 CFM Air Compressor - Diesel	0.874	17.47	0.00
1600 CFM Air Compressor - Diesel	8.604	0.00	0.00
300 - 350 Amp Diesel Welder	0.391	39.13	19.56
1 - 24 KW Generator	0.892	35.66	17.83
Portable Light Plant - Moon Glo's	0.705	84.61	0.00
Road Broom	1.720	0.00	0.00
Road Broom	1.720	0.00	8.60
Cat IT28, 928, 930, 938 Loader	2.801	0.00	0.00
Cat 966, JA744, WA500, L150 Loader	3.894	19.47	19.47
Skid Steer-Wheeled	1.428	7.14	7.14
Skid Steer - Track	1.428	7.14	7.14
Rough Terrain Scissor Lift	0.818	24.53	0.00
40' Manlift	0.818	0.00	8.18
40' Manlift	0.818	32.70	40.88
60' Manlift	0.818	16.35	32.70
80' Manlift	0.818	0.00	24.53
120' Manlift	0.818	0.00	8.18
135' Manlift	0.818	0.00	8.18
150' Manlift	0.818	0.00	4.09
Forklift	2.003	0.00	0.00
30,000 lb and Greater Straight Mast	2.606	0.00	13.03
30,000 lb and Greater Straight Mast	2.606	0.00	13.03
6,000 - 8,000 lb Extendable	1.380	0.00	13.80
9,000 - 10,000 lb Extendable	2.003	0.00	20.03
9,000 - 10,000 lb Extendable	2.003	0.00	60.10
Fusion Mach 2"Ips-8"Dips (Tracstar 28)	0.491	0.00	0.00
Fusion Mach 4"Ips-12"Dips (Tracstar 412)	0.491	0.00	0.00
Fusion Mach 6"Ips-18"Dips (Tracstar 618)	0.491	0.00	0.00
Fusion Mach 12"Ips-36"Dips(Tracstar 900)	1.263	0.00	0.00
Fusion Machine >36" Ips	2.627	0.00	0.00
Total		395.25	1002.99

Exhibit A
AltAir Renewable Fuels Project

Year 2 Month 4 - Onsite Construction Vehicle Trip Emissions

		Year 2 Month 4 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	6	6
Total Light Vehicle Miles		12	12
Water Truck	2	1	1
Delivery Truck	2	16	28
Fuel/Lube/Mechanic Truck	2	5	6
Misc. MD Truck	5	1	1
Total Medium Truck Miles		49	75
Dump Truck	2	43	72
HD Water Truck/Tractor	2	0	1
Bus	2	35	35
Misc. HD Truck	2	3	5
Total Heavy Truck Miles		162	226

	Emission Rate (lb/mi)[1]	**Year 2 Month 4 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000338	0.00	0.00
Medium Duty	0.0000654	0.00	0.00
Heavy Duty	0.0001559	0.03	0.04
Total		0.03	0.04
CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0017506	0.02	0.02
Medium Duty	0.0022870	0.11	0.17
Heavy Duty	0.0011544	0.19	0.26
Total		0.32	0.45
NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001801	0.00	0.00
Medium Duty	0.0006821	0.03	0.05
Heavy Duty	0.0072378	1.17	1.64
Total		1.21	1.69
SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000065	0.00	0.00
Medium Duty	0.0000108	0.00	0.00
Heavy Duty	0.0000289	0.00	0.01
Total		0.01	0.01
PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001066	0.00	0.00
Medium Duty Exhaust	0.0001423	0.01	0.01
Heavy Duty Exhaust	0.0002770	0.04	0.06
Total Exhaust PM		0.05	0.07
Light Duty Fugitive(2)	0.000221	0.00	0.00
Medium Duty Fugitve(2)	0.000467	0.02	0.04
Heavy Duty Fugitive(2)	0.002314	0.37	0.52
Total Fugitive PM		0.40	0.56
Total		0.45	0.64
PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000447	0.00	0.00
Medium Duty Exhaust	0.0000648	0.00	0.00
Heavy Duty Exhaust	0.0001388	0.02	0.03
Total Exhaust PM		0.03	0.04
Light Duty Fugitive(2)	0.000054	0.00	0.00
Medium Duty Fugitve(2)	0.000115	0.00	0.00
Heavy Duty Fugitive(2)	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.03	0.04
CO2EQ	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.665	7.97	7.97
Medium Duty	1.124	55.08	84.31
Heavy Duty	3.325	538.61	751.39
Total		601.67	843.68

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Year 3 Month 3 - Onsite Construction Vehicle Trip Emissions

		Year 2 Month 8 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	6	6
Total Light Vehicle Miles		12	12
Water Truck	2	1	1
Delivery Truck	2	5	12
Fuel/Lube Truck	2	5	2
Misc. MD Truck	5	1	1
Total Medium Truck Miles		27	35
Dump Truck	2	6	14
Semi-Tractor, Diesel 20 Ton	2	0	1
Bus	2	64	64
Misc. HD Truck	2	2	3
Total Heavy Truck Miles		144	164

	Emission Rate (lb/mi)[1]	**Year 2 Month 8 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000338	0.00	0.00
Medium Duty	0.0000654	0.00	0.00
Heavy Duty	0.0001559	0.02	0.03
Total		0.02	0.03
CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0017506	0.02	0.02
Medium Duty	0.0022870	0.06	0.08
Heavy Duty	0.0011544	0.17	0.19
Total		0.25	0.29
NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001801	0.00	0.00
Medium Duty	0.0006821	0.02	0.02
Heavy Duty	0.0072378	1.04	1.19
Total		1.06	1.21
SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000065	0.00	0.00
Medium Duty	0.0000108	0.00	0.00
Heavy Duty	0.0000289	0.00	0.00
Total		0.00	0.01
PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001066	0.00	0.00
Medium Duty Exhaust	0.0001423	0.00	0.00
Heavy Duty Exhaust	0.0002770	0.04	0.05
Total Exhaust PM		0.05	0.05
Light Duty Fugitive[2]	0.000221	0.00	0.00
Medium Duty Fugitve[2]	0.000467	0.01	0.02
Heavy Duty Fugitive[2]	0.002314	0.33	0.38
Total Fugitive PM		0.35	0.40
Total		0.39	0.45
PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000447	0.00	0.00
Medium Duty Exhaust	0.0000648	0.00	0.00
Heavy Duty Exhaust	0.0001388	0.02	0.02
Total Exhaust PM		0.02	0.03
Light Duty Fugitive[2]	0.000054	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.02	0.03
CO_{2EQ}	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.665	7.97	7.97
Medium Duty	1.124	30.35	39.35
Heavy Duty	3.325	478.76	545.26
Total		517.09	592.58

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Year 3 Month 4 - Onsite Construction Vehicle Trip Emissions

		Year 2 Month 12 (Vehicles per day)	
Vehicle	**Miles per Day**	**Hydrogen Plant**	**Unit B**
Commuters	2	0	0
Misc. Light Vehicles	2	6	7
Total Light Vehicle Miles		12	14
Water Truck	2	1	1
Delivery Truck	2	4	13
Fuel/Lube Truck	2	5	2
Misc. MD Truck	5	1	1
Total Medium Truck Miles		25	37
Dump Truck	2	3	5
Semi-Tractor, Diesel 20 Ton	2	0	0
Bus	2	48	48
Misc. HD Truck	2	1	2
Total Heavy Truck Miles		104	110

	Emission Rate (lb/mi)[1]	**Year 2 Month 12 (lb/day)**	
VOC	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000296	0.00	0.00
Medium Duty	0.0000451	0.00	0.00
Heavy Duty	0.0000524	0.01	0.01
Total		0.01	0.01

CO	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0016139	0.02	0.02
Medium Duty	0.0020146	0.05	0.07
Heavy Duty	0.0009297	0.10	0.10
Total		0.17	0.20

NOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0001590	0.00	0.00
Medium Duty	0.0004915	0.01	0.02
Heavy Duty	0.0054073	0.56	0.59
Total		0.58	0.62

SOx	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.0000063	0.00	0.00
Medium Duty	0.0000105	0.00	0.00
Heavy Duty	0.0000273	0.00	0.00
Total		0.00	0.00

PM10	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0001063	0.00	0.00
Medium Duty Exhaust	0.0001344	0.00	0.00
Heavy Duty Exhaust	0.0002576	0.03	0.03
Total Exhaust PM		0.03	0.03
Light Duty Fugitive[2]	0.000221	0.00	0.00
Medium Duty Fugitve[2]	0.000467	0.01	0.02
Heavy Duty Fugitive[2]	0.002314	0.24	0.25
Total Fugitive PM		0.26	0.27
Total		0.29	0.31

PM2.5	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty Exhaust	0.0000445	0.00	0.00
Medium Duty Exhaust	0.0000570	0.00	0.00
Heavy Duty Exhaust	0.0001202	0.01	0.01
Total Exhaust PM		0.01	0.02
Light Duty Fugitive[2]	0.000054	0.00	0.00
Medium Duty Fugitve[2]	0.000115	0.00	0.00
Heavy Duty Fugitive[2]	0.000568	0.00	0.00
Total Fugitive PM		0.00	0.00
Total		0.01	0.02

CO_{2EQ}	**Month**	**Hydrogen Plant**	**Unit B**
Light Duty	0.644	7.72	9.01
Medium Duty	1.087	27.17	40.21
Heavy Duty	3.147	327.28	346.16
Total		362.17	395.38

(1) Emfac2011 emission factors for the South Coast Air District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and k=0.00054 for PM2.5, sL = road silt loading (gms/m2) (0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks, and 24 for heavy trucks)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	9
Total Light Vehicle Miles		0.45
Delivey Trucks	0.05	28
Water Trucks	0.1	2
Total Medium Truck Miles		1.6
Dump Trucks	0.05	115
Semi-Tractor, Diesel 20 Ton	0.05	5
Total Heavy Truck Miles		6
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	16
Total Heavy-Heavy Duty Miles		1.2

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.41
Medium Duty	1.2863357	2.06
Heavy Duty	2.1931267	13.16
Heavy Heavy Duty	2.4962390	3.00
Uncontrolled Total		18.62
Controlled Total[2]		7.26

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	9
Total Light Vehicle Miles		0.45
Delivey Trucks	0.05	12
Water Trucks	0.1	2
Total Medium Truck Miles		0.8
Dump Trucks	0.05	20
Semi-Tractor, Diesel 20 Ton	0.05	1
Total Heavy Truck Miles		1.05
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	14
Total Heavy-Heavy Duty Miles		1.1

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.41
Medium Duty	1.2863357	1.03
Heavy Duty	2.1931267	2.30
Heavy Heavy Duty	2.4962390	2.75
Uncontrolled Total		6.48
Controlled Total[2]		2.53

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	10
Total Light Vehicle Miles		0.5
Delivey Trucks	0.05	13
Water Trucks	0.1	2
Total Medium Truck Miles		0.85
Dump Trucks	0.05	8
Semi-Tractor, Diesel 20 Ton	0.05	1
Total Heavy Truck Miles		0.45
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	10
Total Heavy-Heavy Duty Miles		0.9

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.45
Medium Duty	1.2863357	1.09
Heavy Duty	2.1931267	0.99
Heavy Heavy Duty	2.4962390	2.25
Uncontrolled Total		4.78
Controlled Total[2]		1.86

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Offroad Construction Vehicle Dust Emissions

Vehicle	Miles/Trip	Trips/Day
Light Vehicles	0.05	6
Total Light Vehicle Miles		0.3
Delivey Trucks	0.05	11
Water Trucks	0.1	2
Total Medium Truck Miles		0.75
Dump Trucks	0.05	10
Semi-Tractor, Diesel 20 Ton	0.05	2
Total Heavy Truck Miles		0.6
Tractors	0.05	2
Fork Lifts	0.05	6
Loader/Backhoe	0.05	5
Total Heavy-Heavy Duty Miles		0.65

PM10	Emission Rate (lb/mi)[1]	Emissions (lb/day)
Light Duty	0.9021196	0.27
Medium Duty	1.2863357	0.96
Heavy Duty	2.1931267	1.32
Heavy Heavy Duty	2.4962390	1.62
Uncontrolled Total		4.17
Controlled Total[2]		1.63

(1) Based on Section 13.2.2 of EPA's Compilation of Air Pollutant Emission Factors (AP-42).
Emission Rate = 1.5((s/12)^.9)*((W/3)^.45)
s = silt content = 8.5%
W = Vehicle Weight (ton) =2.5 for light, 5.5 for medium, 15 for heavy, and 24 for heavy heavy (EMFAC2007).

(2) Controlled Emissions assume that watering 3 times per day reduces emissions by 61 percent (Uncontrolled Emissions x 0.39)

Exhibit A
AltAir Renewable Fuels Project

Peak Monthly Fugitive PM Construction Emissions

Grading Operations	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	3	3	8	0.348	0.39	3.25	3.25	8.34327652	8.34327652	Table A9-9-F

Stockpiles	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	2000	2000	0.00005	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	20	1	1	0.120	0.120	0.120	0.001	0.001	Table A9-9-E

Filling and Dumping	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9
Truck Dumping	2000.0	2000.0	5.15E-05	0.39	0.04019619	0.04019619	0.10306715	0.10306715	Table A9-9

TOTAL PM10 Pounds/day	Average	Peak
(Controlled Emissions)	3.4942	3.49419
(Uncontrolled Emissions)	8.654	8.654

(1) Emissions (lbs/hr) = [0.75 x $(G^{1.5})/(H^{1.4})$ x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x $[(G/5)^{1.3}/(H/2)^{1.4}]$ x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Long Beach 2005-2007 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc



Paramount Petroleum AltAir Paramount Renewable Fuels Project SCAQMD Facility ID 187165

Air Quality and Greenhouse Gas Analysis

Prepared by:

Ashworth Leininger Group
601 East Daily Drive, Suite 302
Camarillo, California 93010
(805) 764-6010

In coordination with

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
(714) 632-8521

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PREFACE – LIST OF CHANGES FROM THE DRAFT SEIR

The draft subsequent EIR (DSEIR) was published December 2021. The DSEIR was based on preliminary engineering designs. Since publication of the DSEIR there have been several minor updates to the preliminary engineering, which have been incorporated into the air quality analysis as detailed below.

1. Updated H-401/402 and H-907/908 incinerator system vent stream flow rates and composition. Updated NOx concentrations from 20 to 30 ppmv @ 3% O2 to be consistent with Rule 1109.1.
2. Updated/increased anticipated project wastewater treatment system flow.
3. Adjusted the service of storage tanks T-5501 (pretreatment oil decant), T-10003 (raw feed), and T-10004 (pretreatment water). Removed Tank T-10003 from the project.
4. Updated the design of the spent clay treating system material from petroleum naphtha to renewable naphtha.
5. Included additional ammonia storage.
6. Updated the stack volumetric flow rate of heater H-151. Updated the stack diameter of the new flare.
7. Corrected typographical errors of the diameters listed in the HRA for AERACIRC sources (storage tanks).
8. Revised the number of trucks and mileage based on updates to the anticipated destination of trucks from the facility; and anticipated limits which will be imposed by the City of Paramount.

1.0 INTRODUCTION

Ashworth Leininger Group (ALG) was contracted by the AltAir Paramount, LLC (AltAir), a wholly owned subsidiary of World Energy, to perform emissions calculations and perform an air quality analysis of the impacts of stationary sources associated with the Renewable Fuels Project. ALG's analysis has been prepared to support the California Environmental Quality Act (CEQA) analysis for the project. This report is prepared based on design and emissions information provided by AltAir.

AltAir has been in partnership with Paramount Petroleum since 2013, when the Paramount Refinery began the process of converting portions of their crude oil refinery into renewable fuels production under the Paramount Petroleum AltAir Renewable Fuels Project. The Project re-purposed existing refinery equipment to produce renewable diesel, jet fuel, and naphtha, as well as fuel gas for the heaters and boilers in the processing units. The process feeds have included non-edible beef tallow and vegetable oils. Construction of the initial modifications to the AltAir facility to produce renewable fuels occurred between 2014 and 2015, and the facility began producing renewable fuels in 2016. In 2018, the AltAir facility was acquired by World Energy; AltAir Paramount, LLC is a wholly owned subsidiary of World Energy.

AltAir is now proposing to complete the Renewable Fuels Project by completing the conversion of the refinery to a renewable fuels facility. The project will convert the remainder of the 50,000 barrel per day crude[1] oil refinery into a 25,000 barrels per day renewable fuels production facility. This conversion will: eliminate the refining of crude oil; support federal and state mandated use of renewable jet fuel, diesel, gasoline and propane; and reduce mobile fuel emissions.

2.0 AIR QUALITY

This section discusses the methodologies used to conduct the evaluation of air quality impacts for the project and technical methods employed in the evaluation. Emissions calculations are provided in Attachment A to this report; calculation strategies are summarized below. Pre-project emissions are based on the 2011 activity levels and/or reported emissions for each emitting unit. The project will affect all operating units at the facility, with the exception of a few units which are not anticipated to change as a result of this project. A summary of the types of proposed modifications to the facility is listed below:

- Shutdown of equipment serving crude oil processing and asphalt manufacturing (process units, heaters, load/unload racks and storage tanks).
- Construction of a new Hydrogen Generation Unit.
- Installation of new process units, including Renewable Fuels Unit B, Pre-Treatment Unit, Wastewater Treatment and other supporting facilities; resulting in additions of fugitive component volatile organic compound (VOC) emissions.
- Installation of a new flare and flare gas recovery to support existing, new and modified process units.
- Construction of new heaters to support new Renewable Fuels Unit B and the new Hydrogen Generation Unit.
- Installation of Selective Catalytic Reduction (SCR) to several existing fired sources to reduce nitrogen oxide (NOx) emissions.
- Repurposing (modifications and adjustments to throughput and commodities) of existing fixed and floating roof storage tanks. No new tanks will be installed as part of this project.
- Repurposing (modifications and adjustments to throughput and commodities) of existing load/unload racks, and installation of a new vapor recovery system.
- Modifications to existing process units, supporting units and equipment; resulting in changes to fugitive component VOC emissions.
- Modifications to existing cooling towers to reduce drift.

The air quality analysis does not include emissions from the following operations, which are not anticipated to change (actual or potential emissions) as a result of this project:

- Remediation operations (soil vapor extraction units)

[1] The refinery capacity was approximately 50,000 barrels per day when operating. A throughput limit condition was later imposed on the refinery operation. One barrel is equivalent to 42 gallons.

- Emergency internal combustion engines
- Existing flare pilot and purge gas emissions
- Lakewood storage tanks 5001 and 5002

2.1 Emissions Calculation Methodology

2.1.1 Pre-Project Emissions

Pre-Project emissions were based on the emissions reported in the calendar year 2011 South Coast Air Quality Management District (SCAQMD) Annual Emission Report (AER) with some adjustments and modifications that are described below. Onsite mobile diesel combustion sources (rail and truck) were not required to be included in the AER but are part of this CEQA analysis and are described below as well.

Combustion Sources

Annual combustion source emissions are based on the 2011 SCAMQD AER. Hourly emission rates were based on the peak fuel use day in operating year 2011.

Storage Tanks and Pipe Fugitives

Emissions from all tanks were recalculated following the methodology of the June 2020 revision to AP-42 Chapter 7.1. Tank throughputs and commodities were based on actual 2011 operations as per the 2011 AER but roof fittings were adjusted as necessary to match Rule 463 and 1178 compliance requirements (e.g., bolted and gasketed). All commodity speciations were updated in concurrence with the most current scientific research.

Tank pipe fugitive emissions were based on 2011 SCAQMD AER emissions (reported as a single value) and divided evenly amongst nine area sources.

Process Unit Fugitive Emissions

Fugitive emissions from process units were based on 2011 SCAQMD AER emissions and divided into area sources. Fugitive emissions were speciated based on the commodity service at each process area, and divided based on the number of fugitive component counts in each process area.

Truck and Rail Load/Unloading Rack Fugitives

Fugitive emissions from truck and rail loading/unloading racks were based on 2011 SCAQMD AER emissions and divided into seven truck loading/unloading area sources and one rail loading/unloading area sources. Fugitive emissions were speciated based on the commodity service at each loading/unloading rack area, and divided based on the throughput at each rack.

Wastewater Treatment

Fugitive emissions from the wastewater treatment system were based on the SCAQMD AER report. The fugitives from the wastewater treatment system were determined by fugitive component counts.

Diesel Combustion Sources – Onsite Trucks

Pre-project truck emissions were based on actual operations in calendar year 2011, assuming approximately 0.5 miles of travel at 5 miles per hour with 15 minutes of engine idling. The annual number of pre-project trucks was 75 trucks per day or 27,375 trucks per year. The peak number of trucks per day in calendar year 2011 was 156 trucks. Heavy heavy-duty truck (HHD Truck) emissions were based on EMFAC2017 emission factors, actual 2011 truck counts, and estimated mileage based on destination of the truck. However, since 2011 to the post-project operating year of 2024, emission factors for mobile emissions, specifically, on-road trucks emission factors, have improved due to the continuous turnover in the truck fleet. The turnover in truck fleet improves emission factors because every year a certain fraction of the older, lower engine tier trucks is replaced by newer, cleaner running trucks. This continuous turnover in truck fleet would occur with or without the project, therefore, the emission factors for trucks actually operating in 2011 were updated to post-project operating year emission factors. Updating the on-road mobile emission factors allows the CEQA analysis to analyze the change in health risk independently from any changes outside of the scope of the project. That is to say, updating the emission factors removes any benefits the project would have shown due to regulatory action, which is not part of the actual project. The adjusted pre-project (and post-project) emission factors were weighted based on expected operations for the 30-year lifetime of the project. Calendar years 2021 and 2022 were based on processing activity of 5,000 barrels per day. Calendar years 2023 and onward were based on 25,000 barrels per day. Emission factors for 2021, 2022, and 2023 were weighted based on expected throughput. The remaining 27 years were weighted based on 2024 emission factors.

Diesel Combustion Sources – Onsite Rail Mover

Pre-project on-site rail emissions are based on the existing Viking Trackmobile. Emission factors for the Viking Trackmobile were based on a mix of approved CARB Executive Order emission factors and OFFROAD2011 model emission factors for off-highway tractors. The Viking Trackmobile operated approximately 2.5 hours per day during the pre-project operating year.

Diesel Combustion Sources – Offsite Rail Mover

Pre-project off-site rail emissions are based on two tier 2 locomotive engines operating at Idle 50 percent of the time and Notch 1 50 percent of the time. Emission factors were primarily from the U.S. EPA Emission Factors for Locomotives (2009) and the 2013 Port of Long Beach Air Emissions Inventory (2014). Pre-project emissions were based on actual activity level of rail in operating year 2011, with each delivery taking approximately 30 minutes.

Diesel Combustion Sources – Offsite Truck Emissions

Post-project truck emissions were based on maximum permitted activity levels for individual loading and unloading racks. The annual number of post-project trucks is expected to be 277 trucks per day traveling approximately 21,606 miles per day or 101,105 trucks per year traveling approximately 7,886,190 miles per year. The peak number of trucks per day is expected to be 540 trucks traveling approximately 42,120 miles. Post-project delivery destinations were based on projected customer

locations and distributions. Local deliveries were assumed to be 30 miles per one-way trip and out of basin deliveries were for Bakersfield (126 miles per one-way trip) and San Francisco (390 miles per one-way trip). The average one-way trip distance for deliveries is 39 miles per one-way trip or 36 miles per one-way trip within the SCAQDM jurisdiction. Of the total miles projected to be traveled, approximately 19,944 miles per day or approximately 7,279,560 miles per year are expected to occur in the jurisdiction for the SCAQMD. Heavy heavy-duty truck (HHD Truck) emissions were based on EMFAC2017 emission factors, maximum or annual projected truck counts, and estimated mileage based on destination of the truck. Similar to the pre-project onsite truck emission factors, the pre-project emission factors for offsite trucks were also weighted based on expected production.

Diesel Combustion Sources – Offsite Locomotive Emissions

All off-site rail emissions were based on routing distances and speeds from Union Pacific milepost marker and Google maps, and emissions factors were primarily from the U.S. EPA Emission Factors for Locomotives (2009) and the 2013 Port of Long Beach Air Emissions Inventory (2014). Pre-project emissions were based on actual destination data and activity level of rail in operating year 2011.

Ocean Going Vessel (OGV) Emissions

There were no products loaded or unloaded from ocean going vessels (OGV) in the pre-project.

Greenhouse Gas Emissions

Greenhouse gas emissions were calculated for all mobile combustion sources, including onroad and offroad diesel engines, ocean going vessels, and rail movements. Onroad diesel emission factors were based on the EMFAC2017 emissions inventory. Construction equipment emission factors were based on the OFFROAD emissions inventory. Rail movement emission factors were based on a combination of the U.S. EPA Emission Factors for Locomotives (U.S. EPA, 2009) and the Port of Long Beach 2013 Air Emissions Inventory (Starcrest, 2014). The assumption for usage and throughput were the same as those used for the criteria pollutant calculations for each emission source.

2.1.2 Post-Project Emissions

Shutdown of Equipment Serving Crude Oil Processing and Asphalt Manufacturing (Process Units, Heaters, Load/Unload Racks and Storage Tanks)

Emissions reductions resulting from the shutdown of Crude Oil Processing, Asphalt Manufacturing and associated support facilities are based on emissions reported during the pre-project period (2011). Combustion emissions are based on RECLAIM reported emissions for NOx and sulfur oxide (SOx), permit limits and other SCAQMD accepted emissions factors. Load/unload rack and storage tank emissions are calculated based on SCAQMD or EPA emission factors using the actual commodities and throughputs during the pre-project period. Fugitive component VOC emissions are based on monitored concentrations and used the Correlation Equation Method described in the SCAQMD Guidelines for Fugitive Emissions Calculations, June 2003 [reference to California Air

Pollution Control Officer's Association (CAPCOA) publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999)].

New Hydrogen Generation Unit

Emissions associated with the new Hydrogen Generation Unit include the following:

9. Fugitive component VOC emissions;
10. Process vent emissions;
11. Heater emissions.

The Hydrogen Generation Unit is assumed to operate 24 hours per day. Fugitive component emissions associated with this unit are evaluated as described in the Fugitive Component Equipment Leaks section, below.

Process vent emissions (VOC, ammonia, and methanol) are calculated based on engineering design estimates. Carbon dioxide (CO_2) emissions are based on methodologies prescribed in Title 40, Code of Federal Regulations (40 CFR §98) Subpart P.

Heater emissions are evaluated as described in the New Heater section, below.

New/Modified Process Units and Support Facilities

New/modified process units and support facility emissions are primarily closed system with no vents to atmosphere. Fugitive component emissions are evaluated as described in the Fugitive Component Equipment Leaks section, below.

Several process units may have small process vent emissions. These vent emissions are estimated based on engineering estimates, and connected to control devices where possible in order to minimize emissions to the maximum extent feasible.

New Flare and Flare Gas System Recovery

The flare system is designed to release to atmosphere only during emergency situations (with the exception of pilot and purge gases). Emissions of pilot and purge gas combustion are estimated based on anticipated flow rates of these gases under normal operation, and SCAQMD emission factors for combustion.

The Flare Gas Recovery System is a closed system with no vents to atmosphere under normal operations. Fugitive component emissions are calculated as described in the Fugitive Component Equipment Leaks section, below.

New Heaters

Three new heaters will be installed as part of this project. These heaters are assumed to operate 24 hours per day. Combustion source startup, shutdown and commissioning emissions were included in the analysis. Emissions increases are calculated by multiplying the maximum fired duty by the

appropriate emissions factor. Criteria pollutant emission factors are based on anticipated Best Available Control Technology (BACT) emissions levels (or higher to be conservative). Toxic pollutant emission factors are based on SCAQMD factors for natural gas combustion. Greenhouse gas emission factors are based on 40 CFR Part 89 Tables C-1 and C-2 for natural gas and adjusted to the anticipated biogenic fraction of the fuel gas.

Modified Boilers

Three existing boilers will be modified to install SCR for NOx control. These boilers are assumed to operate 24 hours per day. Combustion source startup, shutdown and commissioning emissions were included in the analysis. Emissions increases are calculated by multiplying the maximum fired duty by the appropriate emissions factor. Criteria pollutant emission factors are based on current permitted or proposed reduced emissions levels (or higher to be conservative). Toxic pollutant emission factors are based on SCAQMD factors for natural gas combustion. Greenhouse gas emission factors are based on 40 CFR Part 89 Tables C-1 and C-2 for natural gas and adjusted to the anticipated biogenic fraction of the fuel gas.

Modified Incinerators

Existing incinerators will be modified in order to accommodate adjusted operations as a renewable fuels facility. Incinerator H-401 will be modified to include and SCR for NOx control and both incineration systems will include SOx control systems. These incinerators are assumed to operate 24 hours per day. Combustion source startup, shutdown and commissioning emissions were included in the analysis. Emissions increases are calculated by multiplying the maximum fired duty by the appropriate emissions factor. Criteria pollutant emission factors are based on current permitted or proposed reduced emissions levels (or higher to be conservative). Toxic pollutant emission factors are based on SCAQMD factors for natural gas combustion. Greenhouse gas emission factors are based on 40 CFR Part 89 Tables C-1 and C-2 for natural gas and adjusted to the anticipated biogenic fraction of the fuel gas.

Non-Modified Combustion Units

The remaining existing combustion units will remain unmodified; however, an increase in utilization of these units will occur as a result of this project. These units are assumed to operate 24 hours per day. Combustion source startup, shutdown and commissioning emissions were included in the analysis. Emissions increases are calculated by multiplying the maximum fired duty by the appropriate emissions factor. Criteria pollutant emission factors are based on current permitted or proposed reduced emissions levels (or higher to be conservative). Toxic pollutant emission factors are based on SCAQMD factors for natural gas combustion. Greenhouse gas emission factors are based on 40 CFR Part 89 Tables C-1 and C-2 for natural gas and adjusted to the anticipated biogenic fraction of the fuel gas.

Storage Tanks

Storage tank emissions are expected to change as a result of this project. Many of the existing storage tanks will require a change in the allowable materials stored, and an increase in permitted throughputs. A single tank will be modified in order to increase its storage capacity, and several tanks will be physically modified from floating roof to vertical fixed roof type connected to carbon control, modified from fixed roof to internal floating roof, or connected to carbon control. Additionally, several storage tanks will be removed from service. Emissions from storage tanks are estimated following the methodology of the June 2020 revision to AP-42 Chapter 7.1. Site-specific tank parameters and fittings were used for new floating roof tanks; controls required by District Rules 463 and 1178 were also considered in the analysis. Project emissions are calculated based on anticipated post-project throughputs and products to be stored. Detailed storage tank emissions calculations are included in Attachment B to this report.

Fugitive component emissions associated with new tanks are evaluated as described in the Fugitive Component Equipment Leaks section, below.

Load and Unload Racks

Several load racks will be modified to allow for changes in permitted commodity and/or throughput. Other racks will remain unmodified, but the emissions will be affected as a result of this project. Load rack emissions are estimated based on SCAQMD-approved emissions factors (based on AP-42 methods), using material specific emissions characteristics, such as vapor pressure. Load racks vent to a vapor recovery system (VRS). Unload racks do not emit air contaminants, with the exception of fugitive component emissions. Fugitive component emissions from load and unload racks are evaluated as described in the Fugitive Component Equipment Leaks section, below.

Cooling Tower Emissions

Cooling towers will be modified in order to install state-of-the-art mist elimination systems in order to reduce particulate matter emissions. Emissions from cooling towers are estimated based on SCAQMD-approved emission factors and vendor guaranteed drift losses.

Fugitive Component Leaks

Fugitive component leaks are estimated based on the number of components in specific categories (e.g., valves, flanges, connections, etc.), and emission factors based on the component type and service (i.e., heavy liquid, light liquid, or vapor). Net increases in component counts for the modified process units and new equipment are based on preliminary design estimates, with contingency factors applied in order to provide conservative estimates of new fugitive components. Emission factor equations are prescribed by the SCAQMD [see Guidelines for Fugitive Emissions Calculations, June 2003, with reference to the Correlation Equation Method described in the CAPCOA publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999)] and VOC leak concentrations which will be used to establish the potential to emit for each unit. Notably, compliance with applicable Rule 1173, which requires prompt repair of leaking components, will ensure that actual leak rates of these fugitive components remains well below the rates included in this CEQA modeling analysis.

To calculate hazardous air pollutant (HAP) emissions, representative streams were chosen to approximate the toxic compositions within each affected unit. The HAP contents of these representative streams are estimated based on industry data or facility-specific data. HAP emissions are calculated as follows:

$$HAP_i(lb/hr) = [VOC(lb/hr)] \times wt\%_i$$

Onsite Locomotive Emissions

The post-project operations will use an electric rail mover onsite, which will not have any emissions.

Diesel Combustion Sources – Offsite Rail Mover

Post-project off-site rail emissions are based on two tier 2 locomotive engines operating at Idle 50 percent of the time and Notch 1 50 percent of the time. Emission factors were primarily from the U.S. EPA Emission Factors for Locomotives (2009) and the 2013 Port of Long Beach Air Emissions Inventory (2014). Post-project emissions were based one hour of activity per day, 6 days per week, for 52 weeks.

Diesel Combustion Sources – Onsite Truck Emissions

All on-site truck trips were based on approximately 0.5 miles of travel at 5 miles per hour with 15 minutes of engine idling. Pre-project truck emissions were based on actual operations in calendar year 2011. The annual number of pre-project trucks was 75 trucks per day or 27,375 trucks per year. The peak number of trucks per day in calendar year 2011 was 156 trucks. Post-project truck emissions were based on engineering estimates provided by AltAir. The annual number of post-project trucks was based 300 trucks per day or 109,500 trucks per year. The peak number of post-project trucks was based on 540 trucks per day.

The emission factors for mobile on-site trucks were based on EMFAC2017. All trucks visiting the refinery were assumed to be T7-single or T7-tractors. Emission factors for pre-project trucks were based on operating year 2011. The adjusted pre-project emission factors and the post-project emissions factors were based on weighted EMFAC2017 numbers. As described previously, the post-project emission factors were weighted based on expected operations for the 30-year lifetime of the project. Calendar years 2021 and 2022 were based on 5,000 barrels per day. Calendar years 2023 and onward were based on 25,000 barrels per day. Emission factors for 2021, 2022, and 2023 were weighted based on expected throughput. The remaining 27 years were weighted based on 2024 emission factors.

Diesel Combustion Sources – Offsite Truck Emissions

Post-project truck emissions were based on maximum permitted activity levels for individual loading and unloading racks. The annual number of post-project trucks is expected to be 300 trucks per day traveling approximately 23,400 miles per day or 109,500 trucks per year traveling approximately 8,541,000 miles per year. The peak number of trucks per day is expected to be 540 trucks traveling approximately 42,120 miles. Post-project delivery destinations were based on projected customer locations. Of the total miles projected to be traveled, approximately 21,600 miles per day or

approximately 7,884,000 miles per year are expected to occur in the jurisdiction for the SCAQMD. Heavy heavy-duty truck (HHD Truck) emissions were based on EMFAC2017 emission factors, maximum or annual projected truck counts, and estimated mileage based on destination of the truck. Similar to the pre-project onsite truck emission factors, the pre-project emission factors for offsite trucks were also weighted based on expected production.

Diesel Combustion Sources – Offsite Locomotive Emissions

All off-site rail emissions were based on routing distances and speeds from Union Pacific milepost marker and Google maps, and emissions factors were primarily from the U.S. EPA Emission Factors for Locomotives (2009) and the 2013 Port of Long Beach Air Emissions Inventory (2014). The post-project activity level was based on project logistics estimates provided by AltAir. Switching activities were included for offsite railyard activity to arrange railcars for the delivery to the facility. Switching activities are expected to occur at an existing railyard.

Ocean Going Vessel (OGV) Emissions

There were no products loaded or unloaded from ocean going vessels (OGV) in the pre-project. The project OGV emissions were based on 36 barge calls per year, with an average of 43 hours of hoteling per call. Peak day calculations assume the entire barge contents (raw feed) are distributed to AltAir, while annual average emission assume 50 percent of the transit emissions are attributed to AltAir, and the remaining transit emissions are attributed to other customers that load/unload while the barge is at the berth. The barge parameters (engine size, vessel speeds, docking times) and transit routes were based on various Port of Los Angeles (2018) and Port of Long Beach Emission Inventories (2006, 2012). The OGV emission factors were based on the San Pedro Bay Ports Emissions Inventory Methodology Report (Starcrest, 2019). Each barge call must be accompanied by two assist tugs. Assist tug parameters and emissions factors are also based on the various Port Inventories (2006, 2012, 2018) and San Pedro Bay Port Emissions Inventory Methodology Report.

Greenhouse Gas Emissions

Greenhouse gas emissions were calculated for all mobile combustion sources, including onroad and offroad diesel engines, ocean going vessels, and rail movements. Onroad diesel emission factors were based on the EMFAC2017 emissions inventory. Construction equipment emission factors were based on the OFFROAD emissions inventory. Rail movement emission factors were based on a combination of the U.S. EPA Emission Factors for Locomotives (U.S. EPA, 2009) and the Port of Long Beach 2013 Air Emissions Inventory (Starcrest, 2014). The ocean going vessel emission factors were based on the San Pedro Bay Ports Emissions Inventory Methodology Report (Starcrest, 2019). The assumption for usage and throughput were the same as those used for the criteria pollutant calculations for each emission source.

2.2 Summary of Emission Changes

As described previously, operation of the project will result in changes in emissions from operating sources at the facility. Table 1 and Table 3 below summarize the estimated emissions associated with the project. Tables 1 and 3 summarize emissions used for modeling purposes, while Table 2 is used to compare against CEQA daily thresholds. Detailed emissions calculations are included in Attachment A to this report.

Table 1. Summary of Emissions Changes (lbs/hour)

Emission Source	Emissions (lbs/hour)					
	VOC	NOx	SOx	CO	PM_{10}	$PM_{2.5}$
Combustion Sources	4.1	13.5	5.8	17.8	1.9	1.8
Hydrogen Generation Unit	0.5	--	--	0.0	--	--
Pre-Treat Unit	--	--	--	--	0.0	0.0
Cooling Towers	1.5	--	--	--	(1.4)	(0.8)
Load Racks	4.3	--	--	--	--	--
Storage Tanks	5.4	--	--	--	--	--
Fugitive Components	27.6	--	--	--	--	--
Wastewater Treatment	8.0	--	--	--	--	--
Process Vents	4.2	--	--	--	--	--
Onsite Mobile Sources (Truck & Rail)	0.0	0.3	0.0	(0.7)	(0.0)	(0.1)
Offsite Mobile Sources (Truck, Rail and Ship)	1.3	45.4	0.7	8.3	2.0	0.7
Total Combined Emissions	**57.0**	**59.2**	**6.5**	**25.4**	**2.4**	**1.7**

Table 2. Summary of Emissions Changes (lbs/day)

Emission Source	Emissions (lbs/day)					
	VOC	NOx	SOx	CO	PM_{10}	$PM_{2.5}$
Combustion Sources	98.9	52.0	138.2	239.0	44.7	44.2
Hydrogen Generation Unit	12.3	--	--	0.0	--	--
Pre-Treat Unit	--	--	--	--	0.3	0.3
Cooling Towers	35.8	--	--	--	(33.3)	(20.0)
Load Racks	103.7	--	--	--	--	--
Storage Tanks	130.0	--	--	--	--	--
Fugitive Components	662.4	--	--	--	--	--
Wastewater Treatment	192.7	--	--	--	--	--
Process Vents	100.5	--	--	--	--	--
Onsite Mobile Sources (Truck & Rail)	0.5	10.9	0.0	5.6	0.3	(0.1)
Offsite Mobile Sources (Truck, Rail and Ship)	31.5	1,044.6	15.7	179.3	47.2	15.9

Emission Source	Emissions (lbs/day)					
	VOC	NOx	SOx	CO	PM_{10}	$PM_{2.5}$
Subtotal Stationary Sources	**1,336.4**	**52.0**	**138.2**	**239.0**	**11.7**	**24.5**
Subtotal Mobile Sources	**32.1**	**1,055.4**	**15.8**	**185.0**	**47.5**	**15.8**
Total Combined Emissions	**1,368.5**	**1,107.4**	**154.0**	**424.0**	**59.2**	**40.4**
Required Compliance (compliance with Reg XIII and XX)	**1,336.4**	**52.0**	**138.2**	--	**11.7**	**24.5**
Total Project Emissions After Compliance	**32.1**	**1,055.4**	**15.8**	**424.0**	**47.5**	**15.8**
CEQA Mass Daily Threshold	**55**	**55**	**150**	**550**	**150**	**55**
Significant?	**No**	**Yes**	**No**	**No**	**No**	**No**

Table 3. Summary of Emissions Changes (tons/year)

Emission Source	Emissions (tons/year) [CO2e (MT/yr)]						
	VOC	NOx	SOx	CO	PM_{10}	$PM_{2.5}$	CO2e
Combustion Sources	20.9	9.5	24.5	58.7	15.4	15.1	96,121
Hydrogen Generation Unit	2.3	--	--	0.0	--	--	577,344
Pre-Treat Unit	--	--	--	--	0.0	0.0	--
Cooling Towers	6.5	--	--	--	(6.1)	(3.6)	--
Load Racks	12.7	--	--	--	--	--	--
Storage Tanks	23.7	--	--	--	--	--	--
Fugitive Components	120.9	--	--	--	--	--	--
Wastewater Treatment	35.2	--	--	--	--	--	--
Process Vents	18.3	--	--	--	--	--	97,297
Onsite Mobile Sources (Truck)	0.1	1.2	0.0	0.9	0.1	0.0	266
Onsite Mobile Sources (Rail)	(0.0)	(0.1)	(0.0)	(0.5)	(0.0)	(0.0)	(14)
Offsite Mobile Sources (Truck)	0.8	58.2	0.1	12.4	5.1	0.7	14,605
Offsite Mobile Sources (Rail)	2.4	52.7	0.0	15.5	1.4	1.3	3,850
Offsite Mobile Sources (Rail Switcher)	0.0	2.8	0.0	1.3	0.0	0.0	4,410
Offset Mobile Sources (Rail Mover)	0.0	0.4	0.0	0.1	0.0	0.0	30
Offsite Mobile Sources (Ship)	0.4	10.7	0.4	1.0	0.2	0.2	517

Emission Source	Emissions (tons/year) [CO2e (MT/yr)]						
	VOC	NOx	SOx	CO	PM_{10}	$PM_{2.5}$	CO2e
Total Combined Emissions	244.3	135.4	25.1	89.4	16.2	13.7	794,428

3.0 CRITERIA POLLUTANT MODELING

3.1 Methodology

A complete description of the criteria pollutant modeling approach is provided in Attachment C. A summary is provided below. Project emission sources relative to criteria pollutants evaluated for the Project included:

- New, modified and existing combustion sources
- Pretreatment Unit filter media transfer operations
- Cooling towers
- Onsite mobile sources

Emission sources that result in an emission increases of criteria pollutants with ambient air quality standards (AAQSs) over pre-project emissions are included in the criteria pollutant modeling. There will also be substantial reductions in criteria pollutant emissions from the installation of state-of-the-art drift elimination systems on existing cooling towers, as well as the shutdown of existing equipment, including combustion units and asphalt processing equipment which are sources of PM emissions. To simplify the modeling, only the emission increases were considered (e.g., emission decreases associated with equipment shutdowns were not considered). There are also VOC emission increases (and decreases) associated with process unit and piping fugitive components and storage tanks, but there are no AAQSs for VOC emissions and no criteria pollutant modeling is required.

Air Dispersion Model and Inputs. The AMS/EPA Regulatory Model (AERMOD), the air dispersion model currently preferred by U.S. EPA and approved by the SCAQMD, was used for this analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting concentrations at specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts from any combination of point, area, and volume sources in terrain ranging from flat to complex.

Emissions from project stationary combustion sources were assumed to be at maximum capacity 24 hours per day and 365 days per year. For new and modified combustion sources, startup, shutdown

and commissioning emissions were included in the analysis. The modeled emission rates and source parameters are provided in Attachment C.

Onsite truck operations currently occur routinely during the operations of the facility. Emissions were spread evenly over the entire 24-hour operating period. Onsite trucks were modeled as a string of evenly-spaced volume sources along the segments of road where trucks are expected to travel. Modeled emission rates and source parameters for the trucks are provided in Attachment C.

Onsite rail will be converted to electric with no criteria pollutant emissions and was not included in the modeling.

Emission summaries for all modeled sources are provided in Attachment A.

3.2 Thresholds

The criteria pollutants of concern associated with this project are:

- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2)
- Carbon Monoxide (CO)
- Respirable Particulate Matter (PM_{10})
- Fine Particulate Matter ($PM_{2.5}$)

Table 4 shows the basis upon which the significance of modeled criteria pollutant impacts is judged. If the pollutant is in attainment of AAQSs (i.e., NO_2 and CO), then the maximum impact is added to a representative maximum background concentration derived from ambient monitoring, and the total concentration is compared to the most stringent AAQS. A total concentration greater than the AAQS is a significant impact. If the pollutant is not in attainment (i.e., PM_{10} and $PM_{2.5}$), then the impact is significant if the modeled impact is greater than the SCAQMD Significant Change in Concentration value.

Table 4. Total Modeled NO_2, SO_2, and CO Concentrations Compared to AAQSs

Pollutant	Averaging Period	SCAQMD Significant Change (µg/m³)	Most Stringent Ambient Air Quality Standard (µg/m³)
NO_2	1-hour - State	--[a]	339
	1-hour - Federal	--[a]	188
	Annual	--[a]	57
SO_2	1-hour - State	--[a]	655
	1-hour – Federal	--[a]	196
	3-hour	--[a]	1300
	24-hour	--[a]	105
CO	1-hour	--[a]	23,000
	8-hour	--[a]	10,000
PM_{10}	24-hour	2.5	50[b]
	Annual	1.0	20[b]
$PM_{2.5}$	24-hour	2.5	35[b]

[a] SCAQMD is in attainment for these pollutants and averaging periods.

[b] SCAQMD is not in attainment of these standards.

3.3 Summary of Results

Ambient air quality modeling results for NO_2, SO_2, and CO are summarized in Table 5 along with the applicable AAQSs. Modeling results for PM_{10} and $PM_{2.5}$ are shown in Table 6, along with the SCAQMD's applicable Significant Impact Levels.

Table 5. Total Modeled NO_2, SO_2, and CO Concentrations Compared to AAQSs

Pollutant	Averaging Period	Concentrations (µg/m³)		Significant?
		Modeled Impact Plus Background	AAQS	
NO_2	1 Hour - State	209.1	339	No
	1 Hour - Federal	148.4	188	No
	Annual	35.3	57	No
SO_2	1 Hour - State	72.3	655	No
	1 Hour – Federal	56.9	196	No
	24 Hour	25.1	105	No
CO	1 Hour	7,003.5	23,000	No
	8 Hour	5,281.7	10,000	No

Table 6. Modeled Particulate Matter Impacts

Pollutant	Averaging Period	Modeled Impact (µg/m3)	Significance Impact Level [a] (µg/m3)	Significant?
PM_{10}	24-hr	1.49	2.5	No
	Annual	0.41	1	No
$PM_{2.5}$	24-hr	1.43	2.5	No

[a] SCAQMD Significant Increase in Concentration per Rule 1303 Table A-2 and SCAQMD Air Quality Significance Thresholds (see http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf).

As shown in Table 5, the maximum total concentrations (modeled impacts plus background) are less than the most stringent AAQSs for NO_2, SO_2, and CO. Therefore, the modeled increases are not expected to create exceedances of AAQSs. Notably, compliance with the state 1-hour SO_2 standard ensures compliance with the federal 3-hour SO_2 standard listed in Table 4 because the 1-hr values are lower than the 3-hr standard. Impacts associated with ambient NO_2, SO_2, and CO concentrations therefore are expected to be less than significant.

In the case of particulate matter impacts, the comparisons made in Table 6 demonstrate that modeled PM_{10} and $PM_{2.5}$ impacts are less than the Significant Impact Levels. The PM_{10} and $PM_{2.5}$ impacts therefore are also expected to be less than significant.

4.0 HEALTH RISK ASSESSMENT

The emission unit modifications described above were analyzed for health risk impacts via a health risk assessment (HRA) described below and included in Attachment D. Modifications will also be made to the Lakewood Tank Farm, located about 3 miles south of the refinery. Existing storage and pipeline facilities at the company's off-site Lakewood Tank Farm were previously used to store gas oil. For the Renewable Fuels Project, the Lakewood Tank Farm will be storing and blending jet fuel. To conservatively assess the health risks for the Lakewood Tank Farm, no current operations were included. A health risk assessment was prepared for the Lakewood Tank Farm future operations, and the analysis determined that cancer, chronic, and acute risks are expected to be well below significance levels. The discussion below focuses on the refinery HRA; the Lakewood Tank Farm HRA report is included as Attachment E.

4.1 Methodology

A complete description of the health risk assessment approach is provided in the HRA as found in Attachment D. A summary is provided below.

This HRA was performed following the Office of Environmental Health Hazard Assessment (OEHHA), Air Toxics Hot Spots Program Risk Assessment Guidelines[2] and SCAQMD risk assessment guidelines[3] (SCAQMD, 2015). AMS/EPA Regulatory Model (AERMOD) was used as the air dispersion model for this analysis. HARP2 (Hotspots Analysis and Reporting Program) Air Dispersion Modeling & Risk Tool, was used for acute, cancer and chronic risk analysis. AERMOD was run outside of the HARP2 program, and modeling results were imported into HARP2 to complete the risk analysis.

The purpose of the HRA was to evaluate the risk associated with changes in emissions resulting from equipment additions and modifications associated with the conversion of the refinery to a renewable fuels facility. Therefore, calculations were made for the pre-project emissions (defined as the emissions from 2011 activities) and post-project emissions.

A complete description of the toxic air contaminant modeling approach is provided in Attachment D. A summary is provided below. Project emission sources relative to toxic air contaminant emissions evaluated for the project included:

- New, modified and existing combustion sources
- Hydrogen Generation Unit vent emissions
- Load/unload racks
- Storage tanks
- Process units and supporting operations
- Fugitive component emissions
- Cooling towers
- Onsite mobile sources
- Offsite railcar mover (adjacent to facility)

Emissions for the project-related sources were estimated using SCAQMD-approved methodologies. Stationary source and mobile source emissions, and calculation methodologies are provided in Attachment A.

Source parameters used in the modeling are detailed in the HRA provided as Attachment D.

4.2 Thresholds

The SCAQMD's thresholds of significance for health risks associated with toxic air contaminants are as follows:

[2] California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015.

[3] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), October 2020.

- Carcinogens: Incremental increased cancer risk of 10 per one million or greater for the maximally exposed individual; cancer burden greater than 0.5.
- Non-Carcinogens: Incremental hazard index of 1 or greater for the maximally exposed individual. Note that the hazard index is expressed as a ratio of exposure levels to acceptable levels.

4.3 Summary of Results

Project emissions are summarized in Attachment A to this report. As described above, modeling was performed with HARP2 following current SCAQMD HRA guidance. The results of the HRA conducted for the project are summarized below; with a detailed analysis provided as Attachment D for the Paramount Refinery and Attachment E for the Lakewood Tank Farm. Note that with the exception of acute risk, risk values presented in the table represent the increase in risk posed by the project and were calculated by subtracting the post-project risk from the pre-project risk. Acute risk was based solely on the post-project emission increases (nothing was subtracted). Pre-project emissions for the Lakewood facility are considered to be zero. Note that the distance between the two facilities was such that any health risk impacts in the vicinity of the other facility would be negligible.

4.3.1 Paramount Refinery

The increase in cancer risk was found to be below 10 per million at all residential, worker, and sensitive receptors. The increase in chronic and total acute hazard indices were below one at all receptors. A summary of the maximum risk receptors is provided in Table 7 below.

Table 7. Summary of Results (Increase in Health Risk)

Location	Risk/HI Value	Receptor Number	UTM Coordinates		Significant?
			Easting (m)	Northing (m)	
Cancer Risk (Per Million)					
Maximum exposed individual resident (MEIR)	6.8	17	394355	3751500	No
Maximum exposed individual worker (MEIW)[4]	1.3	849	394258.7	3751469	No
Highest sensitive receptor	2.8	3	394491.8	3751457	No
Chronic Hazard Index					
Maximum exposed individual	0.16	769	393900	3751300	No
Acute Hazard Index					
Maximum exposed individual	0.93	866	393838	3751392	No

[4] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

Additionally, cancer burden was calculated to estimate the increase in cancer cases in the population. Cancer burden was calculated for the pre-project emissions and for the post-project emissions, and the difference was negative (cancer burden decreased). A negative cancer burden is less than the SCAQMD CEQA Significance threshold of 0.5.

Locations of the maximum exposed individuals are shown in Figure 1 below.

4.3.2 Lakewood Tank Farm

The increase in cancer risk was found to be well below one per million at all residential, worker, and sensitive receptors. The increase in chronic and total acute hazard indices were below 0.01 at all receptors. A summary of the maximum risk receptors is provided in Table 8 below.

Table 8. Summary of Results (Increase in Health Risk)

Location	Risk/HI Value	Receptor Number	UTM Coordinates		Significant?
			Easting	Northing	
Cancer Risk (Per Million)					
Maximum exposed individual resident	0.23	28	393019	3747083	No
Maximum exposed individual worker	0.0056	393	393100	3747150	No
Highest sensitive receptor	0.11	5	393036	3746943	No
Chronic Hazard Index					
Maximum exposed individual	4.4E-04	251	393200	3746850	No
Acute Hazard Index					
Maximum exposed individual	3.0E-03	14	393019	3746955	No

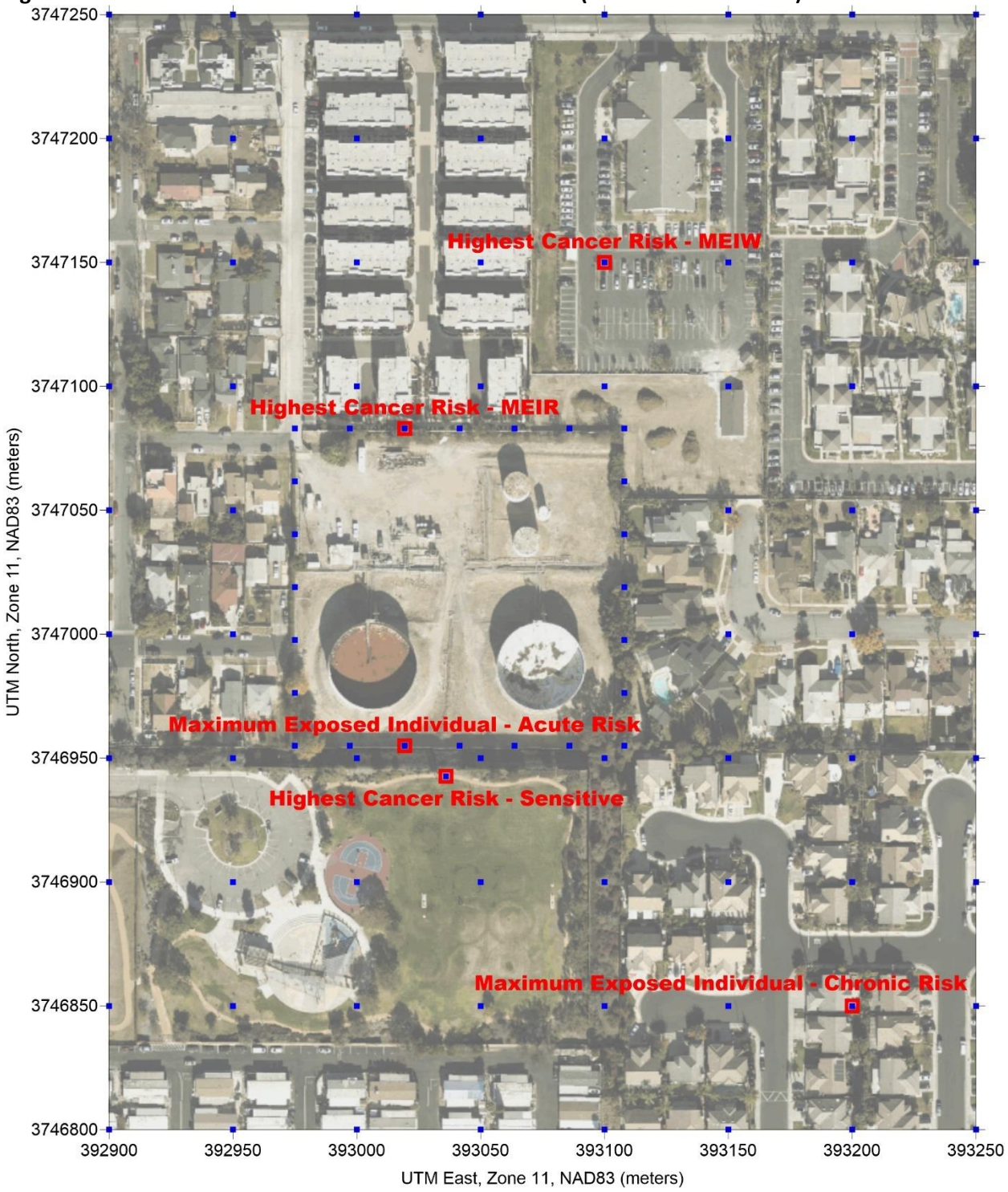
As cancer risk did not exceed one per million at any receptor, cancer burden was not calculated. Locations of the maximum exposed individuals are shown in Figure 2 below.

[5] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

Figure 1. Location of Maximum Calculated Health Risks (Paramount Refinery)



Figure 2. Location of Maximum Calculated Health Risks (Lakewood Tank Farm)



5.0 CONCLUSION

Emissions calculations indicate that increases in daily emissions of SO_2, CO, PM_{10}, and $PM_{2.5}$ are less than the SCAQMD's respective CEQA mass daily significance thresholds. Project emissions calculations demonstrate that NO_2 increases exceed SCAQMD's respective CEQA mass daily significance thresholds due to mobile source emissions. A detailed air dispersion modeling analysis of criteria pollutant impacts was performed using AERMOD. The results demonstrate that the potential increases in concentrations of NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ are less than the SCAQMD's respective CEQA significance thresholds. HRAs for the project at the refinery and at the Lakewood Tank Farm indicated health risks from toxic chemical emissions are expected to be below risk thresholds for cancer, chronic, and acute risk. Therefore, the modeled impacts of criteria pollutant and toxic chemical emissions from the Renewable Fuels Project are expected to be less than significant.

ATTACHMENT A. EMISSION SUMMARIES

Table	Title
A-1	Summary of Emissions Changes, Daily
A-2	Summary of Emissions Changes, Annual/Hourly
A-3	Project Potential Stationary Combustion Emissions Calculations
A-4	Project Potential Hydrogen Generation Unit Process Emissions Calculations
A-5	Project Potential Filter Media Transfer Emissions Calculations
A-6	Project Potential Cooling Tower Emissions Calculations
A-7	Project Potential Load Rack Emissions Calculations
A-8	Project Potential Storage Tank Emissions Calculations
A-9	Project Potential Fugitive Component Emissions Calculations
A-10	Project Potential Ammonia Fugitive Component Emissions Calculations
A-11	Project Potential Wastewater Treatment Emissions Calculations
A-12	Project Potential H401/H402 Process Vent Emissions Calculations
A-13	Project Potential H907/H908 Process Vent Emissions Calculations
A-14	Fuel Composition Data
A-15	Toxic Speciation Profiles
A-16	Natural Gas Combustion Emission Factors for Polycyclic Aromatic Hydrocarbons (PAH)
A-17	Mobile Source Emissions Summary
A-18	Mobile Source Emissions Calculations – Offsite Trucks
A-19	Mobile Source Emissions Calculations – Onsite Trucks
A-20	Mobile Source Emissions Calculations – Offsite Rail
A-21	Mobile Source Emissions Calculations – Offsite Rail Switcher
A-22	Mobile Source Emissions Calculations – Onsite Rail
A-23	Mobile Source Emissions Calculations – Offsite Marine Vessels
A-24	Mobile Source Emissions Calculations – Offsite Rail Mover
A-25	Additional Project Information

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		Criteria Pollutant Emissions (lbs/day)																	
		VOC			NOx			SOx			CO			PM10			PM2.5		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change
Combustion Sources																			
H101	D44	1.544	0.922	-0.622	3.173	1.865	-1.307	1.695	1.469	-0.226	7.720	2.271	-5.449	4.632	2.259	-2.373	4.535	2.211	-2.323
H102	D45	2.754	1.598	-1.156	5.226	3.235	-1.991	3.082	2.548	-0.534	13.770	3.939	-9.830	8.262	3.918	-4.344	8.088	3.835	-4.253
H301	D47	0.678	-	-0.678	9.648	-	-9.648	0.600	-	-0.600	3.388	-	-3.388	2.033	-	-2.033	1.990	-	-1.990
H302	D48	1.527	-	-1.527	12.448	-	-12.448	1.382	-	-1.382	7.636	-	-7.636	4.582	-	-4.582	4.485	-	-4.485
H303	D73	2.266	-	-2.266	12.401	-	-12.401	2.043	-	-2.043	11.330	-	-11.330	6.798	-	-6.798	6.655	-	-6.655
H304	D74	3.367	-	-3.367	11.745	-	-11.745	3.116	-	-3.116	16.835	-	-16.835	10.101	-	-10.101	9.889	-	-9.889
H305	D75	3.104	-	-3.104	15.454	-	-15.454	3.009	-	-3.009	15.521	-	-15.521	9.312	-	-9.312	9.117	-	-9.117
H306	D76	1.043	-	-1.043	5.485	-	-5.485	0.955	-	-0.955	5.213	-	-5.213	3.128	-	-3.128	3.062	-	-3.062
H350	New	-	9.882	9.882	-	15.737	15.737	-	6.886	6.886	-	53.230	53.230	-	10.588	10.588	-	10.366	10.366
H351	New	-	9.882	9.882	-	15.737	15.737	-	6.886	6.886	-	53.230	53.230	-	10.588	10.588	-	10.366	10.366
H401/H402	D691/C175	1.485	2.965	1.480	16.855	20.458	3.604	31.802	24.400	-7.402	0.000	20.758	20.758	5.118	7.147	2.029	5.011	7.147	2.136
H501/H502	D46	1.110	4.612	3.501	8.325	4.080	-4.245	0.693	3.213	2.521	5.552	24.841	19.289	3.331	4.941	1.610	3.261	4.837	1.576
H601	D30	6.733	-	-6.733	5.430	-	-5.430	3.592	-	-3.592	33.666	-	-33.666	20.200	-	-20.200	19.776	-	-19.776
H602	D31	1.120	-	-1.120	10.991	-	-10.991	0.557	-	-0.557	5.602	-	-5.602	3.361	-	-3.361	3.291	-	-3.291
H701	D123	0.403	-	-0.403	4.110	-	-4.110	0.209	-	-0.209	2.016	-	-2.016	1.210	-	-1.210	1.184	-	-1.184
H702	D124	0.472	-	-0.472	5.008	-	-5.008	0.250	-	-0.250	2.358	-	-2.358	1.415	-	-1.415	1.385	-	-1.385
H703	D125	0.352	-	-0.352	2.669	-	-2.669	0.030	-	-0.030	1.758	-	-1.758	0.377	-	-0.377	0.369	-	-0.369
H704	D126	0.576	-	-0.576	6.745	-	-6.745	0.321	-	-0.321	2.879	-	-2.879	1.727	-	-1.727	1.691	-	-1.691
H705	D127	0.478	-	-0.478	5.942	-	-5.942	0.259	-	-0.259	2.392	-	-2.392	1.435	-	-1.435	1.405	-	-1.405
H801	D26	1.250	-	-1.250	13.521	-	-13.521	0.642	-	-0.642	6.252	-	-6.252	3.751	-	-3.751	3.672	-	-3.672
H802	D29	7.656	-	-7.656	27.329	-	-27.329	4.037	-	-4.037	38.281	-	-38.281	22.969	-	-22.969	22.486	-	-22.486
H805	D27	1.727	-	-1.727	10.062	-	-10.062	0.522	-	-0.522	8.634	-	-8.634	5.180	-	-5.180	5.072	-	-5.072
H860	D28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H901	D128	-	-	-	0.005	-	-0.005	0.001	-	-0.001	-	-	-	-	-	-	-	-	-
H902	D129	0.369	-	-0.369	3.973	-	-3.973	0.151	-	-0.151	1.845	-	-1.845	1.107	-	-1.107	1.083	-	-1.083
H905	Removed	0.188	-	-0.188	1.268	-	-1.268	0.016	-	-0.016	0.939	-	-0.939	0.201	-	-0.201	0.197	-	-0.197
H907/H908	C531/D569	-	5.765	5.765	-	90.962	90.962	-	108.485	108.485	-	92.293	92.293	-	13.897	13.897	-	13.897	13.897
B6	Removed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	D374	-	5.759	5.759	-	11.672	11.672	-	7.958	7.958	-	39.479	39.479	-	7.958	7.958	-	7.791	7.791
B8	D375	-	5.759	5.759	-	11.672	11.672	-	7.958	7.958	-	39.479	39.479	-	7.958	7.958	-	7.791	7.791
B9	D376	1.223	8.528	7.306	36.407	17.284	-19.123	2.936	11.784	8.849	6.113	58.464	52.351	3.668	11.784	8.117	3.591	11.537	7.946
Cogen Turbine	D677	12.586	-	-12.586	6.498	-	-6.498	0.108	-	-0.108	62.929	-	-62.929	13.485	-	-13.485	13.202	-	-13.202
Cogen Duct Burner	D679	1.630	-	-1.630	0.819	-	-0.819	0.014	-	-0.014	8.152	-	-8.152	4.891	-	-4.891	4.788	-	-4.788
New Flare Pilot/Purge	New	-	0.056	0.056	-	1.040	1.040	-	0.005	0.005	-	0.280	0.280	-	0.060	0.060	-	0.060	0.060
H151 (SMR Heater)	New	-	98.824	98.824	-	99.796	99.796	-	18.636	18.636	-	121.522	121.522	-	105.882	105.882	-	103.659	103.659
Subtotal- Combustion Sources		55.641	154.551	98.910	241.537	293.539	52.002	62.021	200.228	138.207	270.779	509.787	239.008	142.273	186.980	44.708	139.285	183.497	44.212
Hydrogen Generation Unit																			
Hydrogen Generation Unit Process Emissions	New	-	12.326	12.326							-	0.002	0.002						
Subtotal- Hydrogen Generation Unit		-	12.326	12.326							-	0.002	0.002						

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		Criteria Pollutant Emissions (lbs/day)																	
		VOC			NOx			SOx			CO			PM10			PM2.5		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change
Pretreat Unit																			
Pretreat Filter Media Transfers	New													-	0.257	0.257	-	0.257	0.257
Subtotal- Pretreat Unit														-	0.257	0.257	-	0.257	0.257
Cooling Towers																			
Y-800/801/802 & Y-501/502	N/A	7.164	45.360	38.196										32.033	9.458	-22.575	19.220	5.675	-13.545
Y-600	N/A	2.388	-	-2.388										10.678	-	-10.678	6.407	-	-6.407
Subtotal- Cooling Towers		9.553	45.360	35.807										42.710	9.458	-33.253	25.626	5.675	-19.952
Load Racks																			
Truck and Rail Load Racks	Various	28.358	132.081	103.723															
Subtotal- Load Racks		28.358	132.081	103.723															
Storage Tanks																			
T-1012	D273	0.009	-	-0.009															
T-1013	D274	0.013	-	-0.013															
T-241	N/A	-	-	-															
T-242	D568	-	0.370	0.370															
T-2002	D336	-	-	-															
T-2014	D337	-	7.867	7.867															
T-10003	D302	0.086	-	-0.086															
T-10004	D303	0.203	-	-0.203															
T-10005	D748	0.906	9.865	8.959															
T-12501	D321	0.103	1.835	1.732															
T-12502	D322	0.107	1.835	1.728															
T-20001	D323	0.161	1.489	1.328															
T-20002	D304	0.426	1.489	1.063															
T-25001	D339	4.086	10.971	6.885															
T-25003	D341	1.172	10.971	9.800															
T-25004	D342	1.526	10.971	9.445															
T-25005	D343	3.963	11.000	7.038															
T-25009	D346	0.475	10.815	10.341															
T-35001	D305	0.327	1.654	1.326															
T-50001	D347	8.191	22.337	14.146															
T-50002	D348	0.221	22.337	22.116															
T-100001	D311	0.771	-	-0.771															
T-100002	D312	1.041	-	-1.041															
T-125001	D351	5.098	-	-5.098															
T-150001	N/A	2.601	1.314	-1.287															
T-150002	D328	1.279	-	-1.279															
T-25A	D329	-	-	-															
T-25B	D330	-	-	-															
T-141	D527	0.007	-	-0.007															
T-142	D528	0.007	-	-0.007															

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		Criteria Pollutant Emissions (lbs/day)																	
		VOC			NOx			SOx			CO			PM10			PM2.5		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change
T-201	D267	-	-	-															
T-202	N/A	-	-	-															
T-203	N/A	-	-	-															
T-204	N/A	-	-	-															
T-509	D523	0.017	-	-0.017															
T-512	D268	-	-	-															
T-513	D269	-	-	-															
T-514	D270	0.096	-	-0.096															
T-515	D272	-	-	-															
T-776	D271	-	-	-															
T-777	D525	0.010	-	-0.010															
T-1001	D169	-	-	-															
T-1014	D275	0.018	-	-0.018															
T-1015	D276	-	-	-															
T-1019	D277	0.024	-	-0.024															
T-1020	D278	-	-	-															
T-1021	D279	-	-	-															
T-1022	D280	0.009	-	-0.009															
T-1023	D281	-	-	-															
T-1024	D282	-	-	-															
T-1025	D283	-	-	-															
T-1026	D284	-	-	-															
T-1027	D285	-	-	-															
T-1028	D286	0.153	-	-0.153															
T-2044	D287	0.056	-	-0.056															
T-2046	D288	0.057	-	-0.057															
T-2047	D289	0.045	-	-0.045															
T-2048	D290	0.036	-	-0.036															
T-2049	D291	0.024	-	-0.024															
T-2501	D292	0.457	-	-0.457															
T-3501	D293	0.058	-	-0.058															
T-5001	D294	0.039	-	-0.039															
T-5002	D295	0.104	-	-0.104															
T-5003	D296	0.054	-	-0.054															
T-5004	D297	0.126	-	-0.126															
T-5005	D298	0.082	-	-0.082															
T-5006	D299	0.375	-	-0.375															
T-5007	D300	0.732	-	-0.732															
T-5010	N/A	-	-	-															
T-5501	D301	0.005	-	-0.005															
T-50007	D326	-	-	-															

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		Criteria Pollutant Emissions (lbs/day)																	
		VOC			NOx			SOx			CO			PM10			PM2.5		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change
T-80001	D327	0.626	-	-0.626															
T-80002	D352	3.943	-	-3.943															
T-125002	D354	3.319	-	-3.319															
D-951	N/A	-	-	-															
T-518	D378	-	0.097	0.097															
T-1000	D168	-	0.005	0.005															
T-3001	D335	0.472	2.109	1.637															
T-6001	D315	0.154	0.699	0.545															
T-6002	D316	0.153	0.699	0.546															
T-10001	D263	0.018	1.617	1.599															
T-10006	D318	0.502	1.910	1.408															
T-10007	D319	1.057	1.910	0.853															
T-10008	D320	0.509	1.977	1.468															
T-10009	D264	0.018	1.617	1.599															
T-20003	D355	1.070	1.234	0.165															
T-20004	D357	0.468	1.234	0.767															
T-20005	D324	1.021	1.203	0.182															
T-25002	D340	3.896	10.971	7.076															
T-25006	D344	5.154	14.303	9.149															
T-25007	D325	1.147	5.020	3.873															
T-25008	D345	0.024	1.127	1.103															
T-50003	D306	-	10.097	10.097															
T-50004	D356	1.966	2.007	0.041															
T-50005	D307	0.518	0.511	-0.007															
T-50006	D309	0.521	0.511	-0.009															
T-50008	N/A	0.412	1.069	0.657															
T-80003	D353	4.034	-	-4.034															
Lakewood T-55001	R-M 32898	-	3.670	3.670															
Lakewood T-55002	R-M 32897	-	3.670	3.670															
Subtotal- Storage Tanks		66.355	196.392	130.037															
Fugitive Components																			
Rule 1173 and Rule 1176 Components	Various	166.395	828.795	662.400															
Subtotal- Fugitive Components		166.395	828.795	662.400															

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		Criteria Pollutant Emissions (lbs/day)																	
		VOC			NOx			SOx			CO			PM10			PM2.5		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change	Pre-Project	Project	Change
Wastewater Treatment																			
Existing WWT System	Various	37.296	211.320	174.024															
New Pretreat WWT System	New	-	18.720	18.720															
Subtotal- Wastewater Treatment		37.296	230.040	192.744															
Process Vents																			
Process Venting to H-401/402	New	-	7.959	7.959															
Process Venting to H-907/908	New	-	92.534	92.534															
Subtotal- Process Vents		-	100.494	100.494															
Onsite Mobile Sources																			
Onsite Truck	N/A	0.227	0.786	0.559	4.594	15.903	11.309	0.010	0.036	0.025	3.367	11.655	8.288	0.200	0.693	0.493	0.028	0.098	0.070
Onsite Rail	N/A	0.016	-	-0.016	0.443	-	-0.443	0.002	-	-0.002	2.668	-	-2.668	0.160	-	-0.160	0.160	-	-0.160
Subtotal- Onsite Mobile Sources		0.243	0.786	0.542	5.037	15.903	10.866	0.012	0.036	0.024	6.035	11.655	5.621	0.360	0.693	0.333	0.188	0.098	-0.090
Offsite Mobile Sources																			
Offsite Truck	N/A	8.296	14.446	6.150	709.170	1,120.435	411.265	1.781	2.804	1.023	128.227	222.187	93.960	63.980	99.429	35.449	8.820	13.713	4.893
Offsite Rail	N/A	3.211	7.990	4.778	69.015	171.716	102.701	0.051	0.128	0.076	20.364	50.668	30.304	1.819	4.526	2.707	1.673	4.164	2.490
Offsite Rail Switcher	N/A	-	0.183	0.183	-	15.379	15.379	-	0.023	0.023	-	6.891	6.891	-	0.228	0.228	-	0.228	0.228
Offsite Rail Mover	N/A	0.071	0.142	0.071	1.525	3.049	1.525	0.001	0.002	0.001	0.450	0.900	0.450	0.040	0.080	0.040	0.037	0.074	0.037
Marine Vessels	N/A	-	20.332	20.332	-	513.682	513.682	-	14.613	14.613	-	47.738	47.738	-	8.770	8.770	-	8.286	8.286
Subtotal- Offsite Mobile Sources		11.578	43.092	31.514	779.710	1,824.262	1,044.552	1.833	17.569	15.736	149.041	328.383	179.342	65.839	113.033	47.194	10.531	26.464	15.934

Sum of Increases and Decreases				
Subtotal- Stationary Sources	1,336.44	52.00	138.21	239.01	11.71	24.52
Subtotal- Mobile Sources	32.06	1,055.42	15.76	184.96	47.53	15.84
Total Combined Sources	1,368.50	1,107.42	153.97	423.97	59.24	40.36

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		GHG Emissions (MT/yr)					
		CO2e			Covered CO2e		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change
Combustion Sources							
H101	D44	3,149	5,951	2,802	3,149	5,951	2,802
H102	D45	4,522	10,321	5,799	4,522	10,321	5,799
H301	D47	1,677	-	-1,677	1,677	-	-1,677
H302	D48	4,051	-	-4,051	4,051	-	-4,051
H303	D73	5,417	-	-5,417	5,417	-	-5,417
H304	D74	8,095	-	-8,095	8,095	-	-8,095
H305	D75	3,468	-	-3,468	3,468	-	-3,468
H306	D76	1,968	-	-1,968	1,968	-	-1,968
H350	New	-	27,895	27,895	-	27,895	27,895
H351	New	-	27,895	27,895	-	27,895	27,895
H401/H402	D691/C175	5,552	8,368	2,817	5,552	8,368	2,817
H501/H502	D46	3,420	13,018	9,598	3,420	13,018	9,598
H601	D30	9,886	-	-9,886	9,886	-	-9,886
H602	D31	3,070	-	-3,070	3,070	-	-3,070
H701	D123	1,086	-	-1,086	1,086	-	-1,086
H702	D124	1,144	-	-1,144	1,144	-	-1,144
H703	D125	922	-	-922	922	-	-922
H704	D126	1,801	-	-1,801	1,801	-	-1,801
H705	D127	1,067	-	-1,067	1,067	-	-1,067
H801	D26	2,240	-	-2,240	2,240	-	-2,240
H802	D29	14,362	-	-14,362	14,362	-	-14,362
H805	D27	4,516	-	-4,516	4,516	-	-4,516
H860	D28	1,462	-	-1,462	1,462	-	-1,462
H901	D128	-	-	-	-	-	-
H902	D129	1,002	-	-1,002	1,002	-	-1,002
H905	Removed	351	-	-351	351	-	-351
H907/H908	C531/D569	7,395	16,272	8,877	7,395	16,272	8,877
B6	Removed	-	-	-	-	-	-
B7	D374	6,101	20,689	14,588	6,101	20,689	14,588
B8	D375	1,328	20,689	19,361	1,328	20,689	19,361
B9	D376	4,266	30,638	26,372	4,266	30,638	26,372
Cogen Turbine	D677	24,029	-	-24,029	24,029	-	-24,029
Cogen Duct Burner	D679	6,468	-	-6,468	6,468	-	-6,468
New Flare Pilot/Purge	New	-	158	158	-	158	158
H151 (SMR Heater)	New	-	48,044	48,044	-	48,044	48,044
Subtotal- Combustion Sources		133,815	229,936	96,121	133,815	229,936	96,121
Hydrogen Generation Unit							
Hydrogen Generation Unit Process Emissions	New	-	577,344	577,344	-	577,344	577,344
Subtotal- Hydrogen Generation Unit		-	577,344	577,344	-	577,344	577,344

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	GHG Emissions (MT/yr)					
		CO2e			Covered CO2e		
		Pre-Project	Project	Change	Pre-Project	Project	Change
Pretreat Unit							
Pretreat Filter Media Transfers	New						
Subtotal- Pretreat Unit							
Cooling Towers							
Y-800/801/802 & Y-501/502	N/A						
Y-600	N/A						
Subtotal- Cooling Towers							
Load Racks							
Truck and Rail Load Racks	Various						
Subtotal- Load Racks							
Storage Tanks							
T-1012	D273						
T-1013	D274						
T-241	N/A						
T-242	D568						
T-2002	D336						
T-2014	D337						
T-10003	D302						
T-10004	D303						
T-10005	D748						
T-12501	D321						
T-12502	D322						
T-20001	D323						
T-20002	D304						
T-25001	D339						
T-25003	D341						
T-25004	D342						
T-25005	D343						
T-25009	D346						
T-35001	D305						
T-50001	D347						
T-50002	D348						
T-100001	D311						
T-100002	D312						
T-125001	D351						
T-150001	N/A						
T-150002	D328						
T-25A	D329						
T-25B	D330						
T-141	D527						
T-142	D528						

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

		GHG Emissions (MT/yr)					
		CO2e			Covered CO2e		
Unit	SCAQMD Device ID	Pre-Project	Project	Change	Pre-Project	Project	Change
T-201	D267						
T-202	N/A						
T-203	N/A						
T-204	N/A						
T-509	D523						
T-512	D268						
T-513	D269						
T-514	D270						
T-515	D272						
T-776	D271						
T-777	D525						
T-1001	D169						
T-1014	D275						
T-1015	D276						
T-1019	D277						
T-1020	D278						
T-1021	D279						
T-1022	D280						
T-1023	D281						
T-1024	D282						
T-1025	D283						
T-1026	D284						
T-1027	D285						
T-1028	D286						
T-2044	D287						
T-2046	D288						
T-2047	D289						
T-2048	D290						
T-2049	D291						
T-2501	D292						
T-3501	D293						
T-5001	D294						
T-5002	D295						
T-5003	D296						
T-5004	D297						
T-5005	D298						
T-5006	D299						
T-5007	D300						
T-5010	N/A						
T-5501	D301						
T-50007	D326						

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	GHG Emissions (MT/yr)					
		CO2e			Covered CO2e		
		Pre-Project	Project	Change	Pre-Project	Project	Change
T-80001	D327						
T-80002	D352						
T-125002	D354						
D-951	N/A						
T-518	D378						
T-1000	D168						
T-3001	D335						
T-6001	D315						
T-6002	D316						
T-10001	D263						
T-10006	D318						
T-10007	D319						
T-10008	D320						
T-10009	D264						
T-20003	D355						
T-20004	D357						
T-20005	D324						
T-25002	D340						
T-25006	D344						
T-25007	D325						
T-25008	D345						
T-50003	D306						
T-50004	D356						
T-50005	D307						
T-50006	D309						
T-50008	N/A						
T-80003	D353						
Lakewood T-55001	R-M 32898						
Lakewood T-55002	R-M 32897						
Subtotal- Storage Tanks							
Fugitive Components							
Rule 1173 and Rule 1176 Components	Various						
Subtotal- Fugitive Components							

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-1: Summary of Emissions Changes, Daily
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	GHG Emissions (MT/yr) CO2e Pre-Project	CO2e Project	CO2e Change	Covered CO2e Pre-Project	Covered CO2e Project	Covered CO2e Change
Wastewater Treatment							
Existing WWT System	Various						
New Pretreat WWT System	New						
Subtotal- Wastewater Treatment							
Process Vents							
Process Venting to H-401/402	New	-	17,651	17,651	-	17,651	17,651
Process Venting to H-907/908	New	-	79,647	79,647	-	79,647	79,647
Subtotal- Process Vents		-	97,297	97,297	-	97,297	97,297
Onsite Mobile Sources							
Onsite Truck	N/A	89	355	266			
Onsite Rail	N/A	14	-	-14			
Subtotal- Onsite Mobile Sources		103	355	252			
Offsite Mobile Sources							
Offsite Truck	N/A	13,984	28,589	14,605			
Offsite Rail	N/A	25	3,875	3,850			
Offsite Rail Switcher	N/A	-	4,410	4,410			
Offsite Rail Mover	N/A	4	35	30			
Marine Vessels	N/A	-	517	517			
Subtotal- Offsite Mobile Sources		14,013	37,426	23,413			

Sum of Increases and Decreases

Subtotal- Stationary Sources	770,762	770,762
Subtotal- Mobile Sources	23,665	-
Total Combined Sources	794,428	770,762

[1] Pre-project emissions are based on 2011 activity levels.

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

		VOC				NOx				SOx				CO			
		Pre-Project	Project	Change		Pre-Project	Project	Change		Pre-Project	Project	Change		Pre-Project	Project	Change	
Unit	SCAQMD Device ID	(tpy)	(tpy)	(tpy)	(lbs/hr)	(tpy)	(tpy)	(tpy)	(lbs/hr MSS)	(tpy)	(tpy)	(tpy)	(lbs/hr MSS)	(tpy)	(tpy)	(tpy)	(lbs/hr MSS)
Combustion Sources																	
H101	D44	0.203	0.168	-0.035	-0.026	0.417	0.440	0.024	0.434	0.202	0.268	0.066	-0.009	1.014	0.452	-0.562	-0.034
H102	D45	0.290	0.292	0.002	-0.048	0.550	0.764	0.214	0.764	0.289	0.465	0.176	-0.022	1.448	0.784	-0.665	-0.075
H301	D47	0.084	-	-0.084	-0.028	1.200	-	-1.200	-0.402	0.065	-	-0.065	-0.025	0.421	-	-0.421	-0.141
H302	D48	0.204	-	-0.204	-0.064	1.659	-	-1.659	-0.519	0.165	-	-0.165	-0.058	1.018	-	-1.018	-0.318
H303	D73	0.272	-	-0.272	-0.094	1.490	-	-1.490	-0.517	0.218	-	-0.218	-0.085	1.361	-	-1.361	-0.472
H304	D74	0.407	-	-0.407	-0.140	1.419	-	-1.419	-0.489	0.335	-	-0.335	-0.130	2.034	-	-2.034	-0.701
H305	D75	0.174	-	-0.174	-0.129	0.868	-	-0.868	-0.644	0.147	-	-0.147	-0.125	0.871	-	-0.871	-0.647
H306	D76	0.099	-	-0.099	-0.043	0.520	-	-0.520	-0.229	0.079	-	-0.079	-0.040	0.494	-	-0.494	-0.217
H350	New	-	1.804	1.804	0.412	-	4.435	4.435	4.007	-	1.257	1.257	0.287	-	9.695	9.695	2.218
H351	New	-	1.804	1.804	0.412	-	3.203	3.203	3.643	-	1.257	1.257	0.287	-	9.534	9.534	2.218
H401/H402	D691/C175	0.250	0.541	0.291	0.062	2.837	3.807	0.971	0.559	5.101	4.453	-0.648	-0.308	0.000	3.788	3.788	0.865
H501/H502	D46	0.172	0.842	0.670	0.146	1.289	0.963	-0.325	0.892	0.093	0.586	0.493	0.105	0.859	4.477	3.618	0.804
H601	D30	0.519	-	-0.519	-0.281	0.418	-	-0.418	-0.226	0.240	-	-0.240	-0.150	2.594	-	-2.594	-1.403
H602	D31	0.161	-	-0.161	-0.047	1.580	-	-1.580	-0.458	0.068	-	-0.068	-0.023	0.805	-	-0.805	-0.233
H701	D123	0.057	-	-0.057	-0.017	0.580	-	-0.580	-0.171	0.028	-	-0.028	-0.009	0.285	-	-0.285	-0.084
H702	D124	0.060	-	-0.060	-0.020	0.637	-	-0.637	-0.209	0.030	-	-0.030	-0.010	0.300	-	-0.300	-0.098
H703	D125	0.059	-	-0.059	-0.015	0.451	-	-0.451	-0.111	0.005	-	-0.005	-0.001	0.297	-	-0.297	-0.073
H704	D126	0.094	-	-0.094	-0.024	1.106	-	-1.106	-0.281	0.049	-	-0.049	-0.013	0.472	-	-0.472	-0.120
H705	D127	0.056	-	-0.056	-0.020	0.695	-	-0.695	-0.248	0.029	-	-0.029	-0.011	0.280	-	-0.280	-0.100
H801	D26	0.118	-	-0.118	-0.052	1.271	-	-1.271	-0.563	0.055	-	-0.055	-0.027	0.588	-	-0.588	-0.260
H802	D29	0.754	-	-0.754	-0.319	2.690	-	-2.690	-1.139	0.359	-	-0.359	-0.168	3.768	-	-3.768	-1.595
H805	D27	0.237	-	-0.237	-0.072	1.381	-	-1.381	-0.419	0.065	-	-0.065	-0.022	1.185	-	-1.185	-0.360
H860	D28	0.077	-	-0.077	-	0.905	-	-0.905	-	0.035	-	-0.035	-	0.384	-	-0.384	-
H901	D128	-	-	-	-	0.001	-	-0.001	-0.000	0.000	-	-0.000	-0.000	-	-	-	-
H902	D129	0.065	-	-0.065	-0.015	0.695	-	-0.695	-0.166	0.025	-	-0.025	-0.006	0.323	-	-0.323	-0.077
H905	Removed	0.023	-	-0.023	-0.008	0.153	-	-0.153	-0.053	0.002	-	-0.002	-0.001	0.113	-	-0.113	-0.039
H907/H908	C531/D569	0.280	1.052	0.772	0.240	6.739	16.360	9.621	2.453	3.206	19.799	16.592	4.520	1.441	16.844	15.402	3.846
B6	Removed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	D374	0.320	1.051	0.731	0.240	6.114	2.169	-3.945	0.811	0.203	1.452	1.249	0.332	1.600	7.402	5.802	3.290
B8	D375	0.070	1.051	0.981	0.240	1.722	2.169	0.447	0.811	0.258	1.452	1.194	0.332	0.348	7.402	7.054	3.290
B9	D376	0.223	1.556	1.333	0.304	6.644	3.212	-3.432	-0.317	0.536	2.151	1.615	0.369	1.116	10.962	9.846	4.617
Cogen Turbine	D677	1.548	-	-1.548	-0.524	0.799	-	-0.799	-0.271	0.133	-	-0.133	-0.004	7.740	-	-7.740	-2.622
Cogen Duct Burner	D679	0.428	-	-0.428	-0.068	0.215	-	-0.215	-0.034	0.036	-	-0.036	-0.001	2.138	-	-2.138	-0.340
New Flare Pilot/Purge	New	-	0.010	0.010	0.002	-	0.190	0.190	0.043	-	0.001	0.001	0.000	-	0.051	0.051	0.012
H151 (SMR Heater)	New	-	18.035	18.035	4.118	-	18.789	18.789	6.557	-	3.421	3.421	0.861	-	22.559	22.559	6.654
Subtotal- Combustion Sources		7.301	28.206	20.905	4.121	47.043	56.501	9.458	13.510	12.052	36.562	24.509	5.843	35.297	93.950	58.654	17.802

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	VOC				NOx				SOx				CO			
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)
Hydrogen Generation Unit																	
Hydrogen Generation Unit Process Emissions	New	-	2.250	2.250	0.514									-	0.000	0.000	0.000
Subtotal- Hydrogen Generation Unit		-	2.250	2.250	0.514									-	0.000	0.000	0.000
Pretreat Unit																	
Pretreat Filter Media Transfers	New																
Subtotal- Pretreat Unit																	
Cooling Towers																	
Y-800/801/802 & Y-501/502	N/A	1.308	8.278	6.971	1.591												
Y-600	N/A	0.436	-	-0.436	-0.100												
Subtotal- Cooling Towers		1.743	8.278	6.535	1.492												
Load Racks																	
Truck and Rail Load Racks	Various	5.175	17.840	12.665	4.322												
Subtotal- Load Racks		5	17.840	12.665	4.322												
Storage Tanks																	
T-1012	D273	0.002	-	-0.002	-0.000												
T-1013	D274	0.002	-	-0.002	-0.001												
T-241	N/A	-	-	-	-												
T-242	D568	-	0.068	0.068	0.015												
T-2002	D336	-	-	-	-												
T-2014	D337	-	1.436	1.436	0.328												
T-10003	D302	0.016	-	-0.016	-0.004												
T-10004	D303	0.037	-	-0.037	-0.008												
T-10005	D748	0.165	1.800	1.635	0.373												
T-12501	D321	0.019	0.335	0.316	0.072												
T-12502	D322	0.019	0.335	0.315	0.072												
T-20001	D323	0.029	0.272	0.242	0.055												
T-20002	D304	0.078	0.272	0.194	0.044												
T-25001	D339	0.746	2.002	1.257	0.287												
T-25003	D341	0.214	2.002	1.788	0.408												
T-25004	D342	0.279	2.002	1.724	0.394												
T-25005	D343	0.723	2.008	1.284	0.293												
T-25009	D346	0.087	1.974	1.887	0.431												
T-35001	D305	0.060	0.302	0.242	0.055												
T-50001	D347	1.495	4.077	2.582	0.589												
T-50002	D348	0.040	4.077	4.036	0.922												
T-100001	D311	0.141	-	-0.141	-0.032												
T-100002	D312	0.190	-	-0.190	-0.043												

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

		VOC				NOx				SOx				CO			
Unit	SCAQMD Device ID	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)
T-125001	D351	0.930	-	-0.930	-0.212												
T-150001	N/A	0.475	0.240	-0.235	-0.054												
T-150002	D328	0.233	-	-0.233	-0.053												
T-25A	D329	-	-	-	-												
T-25B	D330	-	-	-	-												
T-141	D527	0.001	-	-0.001	-0.000												
T-142	D528	0.001	-	-0.001	-0.000												
T-201	D267	-	-	-	-												
T-202	N/A	-	-	-	-												
T-203	N/A	-	-	-	-												
T-204	N/A	-	-	-	-												
T-509	D523	0.003	-	-0.003	-0.001												
T-512	D268	-	-	-	-												
T-513	D269	-	-	-	-												
T-514	D270	0.017	-	-0.017	-0.004												
T-515	D272	-	-	-	-												
T-776	D271	-	-	-	-												
T-777	D525	0.002	-	-0.002	-0.000												
T-1001	D169	-	-	-	-												
T-1014	D275	0.003	-	-0.003	-0.001												
T-1015	D276	-	-	-	-												
T-1019	D277	0.004	-	-0.004	-0.001												
T-1020	D278	-	-	-	-												
T-1021	D279	-	-	-	-												
T-1022	D280	0.002	-	-0.002	-0.000												
T-1023	D281	-	-	-	-												
T-1024	D282	-	-	-	-												
T-1025	D283	-	-	-	-												
T-1026	D284	-	-	-	-												
T-1027	D285	-	-	-	-												
T-1028	D286	0.028	-	-0.028	-0.006												
T-2044	D287	0.010	-	-0.010	-0.002												
T-2046	D288	0.010	-	-0.010	-0.002												
T-2047	D289	0.008	-	-0.008	-0.002												
T-2048	D290	0.007	-	-0.007	-0.001												
T-2049	D291	0.004	-	-0.004	-0.001												
T-2501	D292	0.083	-	-0.083	-0.019												
T-3501	D293	0.011	-	-0.011	-0.002												
T-5001	D294	0.007	-	-0.007	-0.002												
T-5002	D295	0.019	-	-0.019	-0.004												

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

		VOC				NOx				SOx				CO			
Unit	SCAQMD Device ID	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)
T-5003	D296	0.010	-	-0.010	-0.002												
T-5004	D297	0.023	-	-0.023	-0.005												
T-5005	D298	0.015	-	-0.015	-0.003												
T-5006	D299	0.068	-	-0.068	-0.016												
T-5007	D300	0.134	-	-0.134	-0.031												
T-5010	N/A	-	-	-	-												
T-5501	D301	0.001	-	-0.001	-0.000												
T-50007	D326	-	-	-	-												
T-80001	D327	0.114	-	-0.114	-0.026												
T-80002	D352	0.720	-	-0.720	-0.164												
T-125002	D354	0.606	-	-0.606	-0.138												
D-951	N/A	-	-	-	-												
T-518	D378	-	0.018	0.018	0.004												
T-1000	D168	-	0.001	0.001	0.000												
T-3001	D335	0.086	0.385	0.299	0.068												
T-6001	D315	0.028	0.128	0.099	0.023												
T-6002	D316	0.028	0.128	0.100	0.023												
T-10001	D263	0.003	0.295	0.292	0.067												
T-10006	D318	0.092	0.349	0.257	0.059												
T-10007	D319	0.193	0.349	0.156	0.036												
T-10008	D320	0.093	0.361	0.268	0.061												
T-10009	D264	0.003	0.295	0.292	0.067												
T-20003	D355	0.195	0.225	0.030	0.007												
T-20004	D357	0.085	0.225	0.140	0.032												
T-20005	D324	0.186	0.220	0.033	0.008												
T-25002	D340	0.711	2.002	1.291	0.295												
T-25006	D344	0.941	2.610	1.670	0.381												
T-25007	D325	0.209	0.916	0.707	0.161												
T-25008	D345	0.004	0.206	0.201	0.046												
T-50003	D306	-	1.843	1.843	0.421												
T-50004	D356	0.359	0.366	0.007	0.002												
T-50005	D307	0.095	0.093	-0.001	-0.000												
T-50006	D309	0.095	0.093	-0.002	-0.000												
T-50008	N/A	0.075	0.195	0.120	0.027												

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	VOC				NOx				SOx				CO			
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr MSS)
T-80003	D353	0.736	-	-0.736	-0.168												
Lakewood T-55001	R-M 32898	-	0.670	0.670	0.153												
Lakewood T-55002	R-M 32897	-	0.670	0.670	0.153												
Subtotal- Storage Tanks		12.110	35.842	23.732	5.418												
Fugitive Components																	
Rule 1173 and Rule 1176 Components	Various	30.367	151.255	120.888	27.600												
Subtotal- Fugitive Components		30.367	151.255	120.888	27.600												
Wastewater Treatment																	
Existing WWT System	Various	6.807	38.566	31.759	7.251												
New Pretreat WWT System	New	-	3.416	3.416	0.780												
Subtotal- Wastewater Treatment		6.807	41.982	35.176	8.031												
Process Vents																	
Process Venting to H-401/402	New	-	1.453	1.453	0.332												
Process Venting to H-907/908	New	-	16.888	16.888	3.856												
Subtotal- Process Vents		-	18.340	18.340	4.187												
Onsite Mobile Sources																	
Onsite Truck	N/A	0.020	0.080	0.060	0.023	0.403	1.612	1.209	0.471	0.001	0.004	0.003	0.001	0.295	1.182	0.886	0.345
Onsite Rail	N/A	0.003	-	-0.003	-0.007	0.081	-	-0.081	-0.177	0.000	-	-0.000	-0.001	0.487	-	-0.487	-1.067
Subtotal- Onsite Mobile Sources		0.023	0.080	0.057	0.017	0.484	1.612	1.129	0.294	0.001	0.004	0.002	0.000	0.782	1.182	0.399	-0.722
Offsite Mobile Sources																	
Offsite Truck	N/A	0.654	1.465	0.810	0.256	55.361	113.600	58.239	17.136	0.139	0.284	0.145	0.043	10.111	22.527	12.417	3.915
Offsite Rail	N/A	0.038	2.467	2.429	0.199	0.342	53.024	52.682	4.279	0.000	0.039	0.039	0.003	0.101	15.646	15.545	1.263
Offsite Rail Switcher	N/A	-	0.033	0.033	0.030	-	2.807	2.807	2.563	-	0.004	0.004	0.004	-	1.258	1.258	1.148
Offsite Rail Mover	N/A	0.003	0.022	0.019	-	0.061	0.476	0.415	-	0.000	0.000	0.000	-	0.018	0.140	0.122	-
Marine Vessels	N/A	-	0.426	0.426	0.847	-	10.712	10.712	21.403	-	0.365	0.365	0.609	-	0.991	0.991	1.989
Subtotal- Offsite Mobile Sources		0.696	4.413	3.717	1.333	55.764	180.618	124.854	45.382	0.139	0.693	0.554	0.658	10.230	40.562	30.332	8.315
Total Combined Emissions		64.22	308.49	244.26	57.03	103.29	238.73	135.44	59.19	12.19	37.26	25.07	6.50	46.31	135.69	89.39	25.40

[1] Pre-project emissions are based on 2011 activity levels.

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	PM10				PM2.5				CO2e			Covered CO2e		
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)
Combustion Sources															
H101	D44	0.608	0.412	-0.196	-0.099	0.596	0.404	-0.192	-0.097	3,149	5,951	2,802	3,149	5,951	2,802
H102	D45	0.869	0.715	-0.154	-0.181	0.851	0.700	-0.151	-0.177	4,522	10,321	5,799	4,522	10,321	5,799
H301	D47	0.253	-	-0.253	-0.085	0.247	-	-0.247	-0.083	1,677	-	-1,677	1,677	-	-1,677
H302	D48	0.611	-	-0.611	-0.191	0.598	-	-0.598	-0.187	4,051	-	-4,051	4,051	-	-4,051
H303	D73	0.817	-	-0.817	-0.283	0.799	-	-0.799	-0.277	5,417	-	-5,417	5,417	-	-5,417
H304	D74	1.220	-	-1.220	-0.421	1.195	-	-1.195	-0.412	8,095	-	-8,095	8,095	-	-8,095
H305	D75	0.523	-	-0.523	-0.388	0.512	-	-0.512	-0.380	3,468	-	-3,468	3,468	-	-3,468
H306	D76	0.297	-	-0.297	-0.130	0.290	-	-0.290	-0.128	1,968	-	-1,968	1,968	-	-1,968
H350	New	-	1.932	1.932	0.441	-	1.892	1.892	0.432	-	27,895	27,895	-	27,895	27,895
H351	New	-	1.932	1.932	0.441	-	1.892	1.892	0.432	-	27,895	27,895	-	27,895	27,895
H401/H402	D691/C175	0.861	1.304	0.443	0.085	0.861	1.304	0.443	0.089	5,552	8,368	2,817	5,552	8,368	2,817
H501/H502	D46	0.516	0.902	0.386	0.067	0.505	0.883	0.378	0.066	3,420	13,018	9,598	3,420	13,018	9,598
H601	D30	1.556	-	-1.556	-0.842	1.524	-	-1.524	-0.824	9,886	-	-9,886	9,886	-	-9,886
H602	D31	0.483	-	-0.483	-0.140	0.473	-	-0.473	-0.137	3,070	-	-3,070	3,070	-	-3,070
H701	D123	0.171	-	-0.171	-0.050	0.167	-	-0.167	-0.049	1,086	-	-1,086	1,086	-	-1,086
H702	D124	0.180	-	-0.180	-0.059	0.176	-	-0.176	-0.058	1,144	-	-1,144	1,144	-	-1,144
H703	D125	0.064	-	-0.064	-0.016	0.062	-	-0.062	-0.015	922	-	-922	922	-	-922
H704	D126	0.283	-	-0.283	-0.072	0.277	-	-0.277	-0.070	1,801	-	-1,801	1,801	-	-1,801
H705	D127	0.168	-	-0.168	-0.060	0.164	-	-0.164	-0.059	1,067	-	-1,067	1,067	-	-1,067
H801	D26	0.353	-	-0.353	-0.156	0.345	-	-0.345	-0.153	2,240	-	-2,240	2,240	-	-2,240
H802	D29	2.261	-	-2.261	-0.957	2.213	-	-2.213	-0.937	14,362	-	-14,362	14,362	-	-14,362
H805	D27	0.711	-	-0.711	-0.216	0.696	-	-0.696	-0.211	4,516	-	-4,516	4,516	-	-4,516
H860	D28	0.230	-	-0.230	-	0.225	-	-0.225	-	1,462	-	-1,462	1,462	-	-1,462
H901	D128	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H902	D129	0.194	-	-0.194	-0.046	0.190	-	-0.190	-0.045	1,002	-	-1,002	1,002	-	-1,002
H905	Removed	0.024	-	-0.024	-0.008	0.024	-	-0.024	-0.008	351	-	-351	351	-	-351
H907/H908	C531/D569	0.663	2.536	1.873	0.579	0.663	2.536	1.873	0.579	7,395	16,272	8,877	7,395	16,272	8,877
B6	Removed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	D374	0.960	1.452	0.492	0.332	0.940	1.422	0.482	0.325	6,101	20,689	14,588	6,101	20,689	14,588
B8	D375	0.209	1.452	1.243	0.332	0.205	1.422	1.217	0.325	1,328	20,689	19,361	1,328	20,689	19,361
B9	D376	0.669	2.151	1.481	0.338	0.655	2.106	1.450	0.331	4,266	30,638	26,372	4,266	30,638	26,372
Cogen Turbine	D677	1.658	-	-1.658	-0.562	1.655	-	-1.655	-0.550	24,029	-	-24,029	24,029	-	-24,029
Cogen Duct Burner	D679	1.283	-	-1.283	-0.204	1.283	-	-1.283	-0.200	6,468	-	-6,468	6,468	-	-6,468
New Flare Pilot/Purge	New	-	0.011	0.011	0.003	-	0.011	0.011	0.003	-	158	158	-	158	158
H151 (SMR Heater)	New	-	19.324	19.324	4.412	-	18.918	18.918	4.319	-	48,044	48,044	-	48,044	48,044
Subtotal- Combustion Sources		18.694	34.124	15.430	1.863	18.392	33.488	15.096	1.842	133,815	229,936	96,121	133,815	229,936	96,121

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	PM10				PM2.5				CO2e			Covered CO2e		
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)
Hydrogen Generation Unit															
Hydrogen Generation Unit Process Emissions	New									-	577,344	577,344	-	577,344	577,344
Subtotal- Hydrogen Generation Unit										-	577,344	577,344	-	577,344	577,344
Pretreat Unit															
Pretreat Filter Media Transfers	New	-	0.047	0.047	0.011	-	0.047	0.047	0.011						
Subtotal- Pretreat Unit		-	0.047	0.047	0.011	-	0.047	0.047	0.011						
Cooling Towers															
Y-800/801/802 & Y-501/502	N/A	5.846	1.726	-4.120	-0.941	3.508	1.036	-2.472	-0.564						
Y-600	N/A	1.949	-	-1.949	-0.445	1.169	-	-1.169	-0.267						
Subtotal- Cooling Towers		7.795	1.726	-6.069	-1.386	4.677	1.036	-3.641	-0.831						
Load Racks															
Truck and Rail Load Racks	Various														
Subtotal- Load Racks															
Storage Tanks															
T-1012	D273														
T-1013	D274														
T-241	N/A														
T-242	D568														
T-2002	D336														
T-2014	D337														
T-10003	D302														
T-10004	D303														
T-10005	D748														
T-12501	D321														
T-12502	D322														
T-20001	D323														
T-20002	D304														
T-25001	D339														
T-25003	D341														
T-25004	D342														
T-25005	D343														
T-25009	D346														
T-35001	D305														
T-50001	D347														
T-50002	D348														
T-100001	D311														
T-100002	D312														

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	PM10				PM2.5				CO2e			Covered CO2e		
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)
T-125001	D351														
T-150001	N/A														
T-150002	D328														
T-25A	D329														
T-25B	D330														
T-141	D527														
T-142	D528														
T-201	D267														
T-202	N/A														
T-203	N/A														
T-204	N/A														
T-509	D523														
T-512	D268														
T-513	D269														
T-514	D270														
T-515	D272														
T-776	D271														
T-777	D525														
T-1001	D169														
T-1014	D275														
T-1015	D276														
T-1019	D277														
T-1020	D278														
T-1021	D279														
T-1022	D280														
T-1023	D281														
T-1024	D282														
T-1025	D283														
T-1026	D284														
T-1027	D285														
T-1028	D286														
T-2044	D287														
T-2046	D288														
T-2047	D289														
T-2048	D290														
T-2049	D291														
T-2501	D292														
T-3501	D293														
T-5001	D294														
T-5002	D295														

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	PM10				PM2.5				CO2e			Covered CO2e		
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)
T-5003	D296														
T-5004	D297														
T-5005	D298														
T-5006	D299														
T-5007	D300														
T-5010	N/A														
T-5501	D301														
T-50007	D326														
T-80001	D327														
T-80002	D352														
T-125002	D354														
D-951	N/A														
T-518	D378														
T-1000	D168														
T-3001	D335														
T-6001	D315														
T-6002	D316														
T-10001	D263														
T-10006	D318														
T-10007	D319														
T-10008	D320														
T-10009	D264														
T-20003	D355														
T-20004	D357														
T-20005	D324														
T-25002	D340														
T-25006	D344														
T-25007	D325														
T-25008	D345														
T-50003	D306														
T-50004	D356														
T-50005	D307														
T-50006	D309														
T-50008	N/A														

Table A-2: Summary of Emissions Changes, Annual/Hourly
(Pre-Project[1] Actual to Project Potential)

Unit	SCAQMD Device ID	PM10				PM2.5				CO2e			Covered CO2e		
		Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (tpy)	Project (tpy)	Change (tpy)	Change (lbs/hr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)	Pre-Project (MT/yr)	Project (MT/yr)	Change (MT/yr)
T-80003	D353														
Lakewood T-55001	R-M 32898														
Lakewood T-55002	R-M 32897														
Subtotal- Storage Tanks															
Fugitive Components															
Rule 1173 and Rule 1176 Components	Various														
Subtotal- Fugitive Components															
Wastewater Treatment															
Existing WWT System	Various														
New Pretreat WWT System	New														
Subtotal- Wastewater Treatment															
Process Vents															
Process Venting to H-401/402	New									-	17,651	17,651	-	17,651	17,651
Process Venting to H-907/908	New									-	79,647	79,647	-	79,647	79,647
Subtotal- Process Vents										-	97,297	97,297	-	97,297	97,297
Onsite Mobile Sources															
Onsite Truck	N/A	0.018	0.070	0.053	0.021	0.002	0.010	0.007	0.003	89	355	266			
Onsite Rail	N/A	0.029	-	-0.029	-0.064	0.029	-	-0.029	-0.064	14	-	-14			
Subtotal- Onsite Mobile Sources		0.047	0.070	0.024	-0.043	0.032	0.010	-0.022	-0.061	103	355	252			
Offsite Mobile Sources															
Offsite Truck	N/A	4.986	10.081	5.095	1.477	0.687	1.390	0.703	0.204	13,984	28,589	14,605			
Offsite Rail	N/A	0.009	1.398	1.389	0.113	0.008	1.286	1.277	0.104	25	3,875	3,850			
Offsite Rail Switcher	N/A	-	0.042	0.042	0.038	-	0.042	0.042	0.038	-	4,410	4,410			
Offsite Rail Mover	N/A	0.002	0.013	0.011	-	0.001	0.012	0.010	-	4	35	30			
Marine Vessels	N/A	-	0.193	0.193	0.365	-	0.182	0.182	0.345	-	517	517			
Subtotal- Offsite Mobile Sources		4.997	11.726	6.729	1.993	0.697	2.911	2.214	0.691	14,013	37,426	23,413			
Total Combined Emissions		31.53	47.69	16.16	2.44	23.80	37.49	13.69	1.65	147,931	942,359	794,428	133,815	904,578	770,762

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

										Fuel				Operating Time				Criteria Pollutant Emission Factors								
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Firing Rate	Fire Rate Units		MSS Firing Rate	MSS Firing Rate Units	Control Device(s)	Fuel Type	Fuel High Heating Value at Standard Temperature of 60 F (Btu/scf)	RenewFG Molecular Weight (lb/lbmol)	RenewFG Carbon Content (lb/lb)	MSS Max Hours per Day	MSS Days per Year		Hours per Day	Days per Year	Excess % O2 Basis for VOC, NOx, CO, NH3 ppmv	Excess % O2 Basis for SOx ppmv	VOC EF	VOC EF Units		NOx EF (MSS)	NOx EF (MSS) Units		NOx EF	NOx EF Units	
H101	D44	Heater	No change (SCR C814; existing connection)	12.8	MMBtu/hr	[1]	See H101/H102 Startup Table [10]		SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.003	lb/mmbtu	[1]	60	ppmv	[1]	5	ppmv	[1]
H102	D45	Heater	No change (SCR C814; existing connection)	22.2	MMBtu/hr	[1]	See H101/H102 Startup Table [10]		SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.003	lb/mmbtu	[1]	60	ppmv	[1]	5	ppmv	[1]
H301	D47	Heater	Equipment removed																										
H302	D48	Heater	Equipment removed																										
H303	D73	Heater	Equipment removed																										
H304	D74	Heater	Equipment removed																										
H305	D75	Heater	Equipment removed																										
H306	D76	Heater	Equipment removed																										
H350	New	Heater	New installation (Unit B) - Use SCR C77	60	MMBtu/hr	[1]	See H350/H351 Startup Table [10]		LNB, SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0069	lb/mmbtu	[2]	60	ppmv	[6]	9	ppmv	
H351	New	Heater	New installation (Unit B) - Use SCR C77	60	MMBtu/hr	[1]	See H350/H351 Startup Table [10]		LNB, SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0069	lb/mmbtu	[2]	60	ppmv	[6]	9	ppmv	
H401	D691	Incinerator	Modified to operate as Unit A SOx control	8	MMBtu/hr	[6]	4.4	MMBtu/hr [6]	None	RenewFG or NG	1,059		[4]	24	15 [6]		24	365	3	0	0.0069	lb/mmbtu	[2]	0.127	lb/mmbtu	[2]	30	ppmv	[6]
H402	C175	Incinerator	Modified to operate as Unit A SOx control	10	MMBtu/hr	[1]	5.5	MMBtu/hr [6]	None	RenewFG or NG	1,059		[4]	24	15 [6]		24	365	3	0	0.0069	lb/mmbtu	[2]	0.127	lb/mmbtu	[2]	30	ppmv	[6]
H501/H502	D46	Heater	No change (SCR C814; existing connection)	28	MMBtu/hr	[1]	See H501/H502 Startup Table [10]		LNB, SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0069	lb/mmbtu	[2]	60	ppmv	[6]	5	ppmv	[1]
H601	D30	Heater	Equipment removed																										
H602	D31	Heater	Equipment removed																										
H701	D123	Heater	Equipment removed																										
H702	D124	Heater	Equipment removed																										
H703	D125	Heater	Equipment removed																										
H704	D126	Heater	Equipment removed																										
H705	D127	Heater	Equipment removed																										
H801	D26	Heater	Equipment removed																										
H802	D29	Heater	Equipment removed																										
H805	D27	Heater	Equipment removed																										
H860	D28	Heater	Equipment removed																										
H901	D128	Heater	Equipment removed																										
H902	D129	Heater	Equipment removed																										
H905	Removed	Heater	Equipment previously removed from permit																										
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	20	MMBtu/hr	[1]	11	MMBtu/hr [6]	LNB	RenewFG or NG	1,059		[4]	24	15 [6]		24	365	3	0	0.0069	lb/mmbtu	[2]	0.127	lb/mmbtu	[2]	30	ppmv	[6]
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	15	MMBtu/hr	[1]	8.25	MMBtu/hr [6]	None	NG	1,028		[3]	24	15 [6]		24	365	3	0	0.0069	lb/mmbtu	[2]	0.127	lb/mmbtu	[2]	30	ppmv	[6]
B6	Removed	Boiler	Equipment previously removed from permit																										
B7	D374	Boiler	Connect to existing SCR C794	44.5	MMBtu/hr	[1]	See B7/B8/B9 Startup Table [10]		SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0054	lb/mmbtu	[12]	60	ppmv	[6]	9	ppmv	
B8	D375	Boiler	Connect to existing SCR C794	44.5	MMBtu/hr	[1]	See B7/B8/B9 Startup Table [10]		SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0054	lb/mmbtu	[12]	60	ppmv	[6]	9	ppmv	
B9	D376	Boiler	Connect to existing SCR C794	65.9	MMBtu/hr	[1]	See B7/B8/B9 Startup Table [10]		SCR	RenewFG or NG	1,059		[4]		[10]		24	365	3	N/A	0.0054	lb/mmbtu	[12]	60	ppmv	[6]	9	ppmv	
Cogen Turbine	D677	Cogen Turbine	Equipment removed																										
Cogen Duct Burner	D679	Duct Burner	Equipment removed																										
New Flare Pilot/Purge	New	Flare	New installation	321	SCFH		SCFH		None	RenewFG or NG	1,059		[4]	0	0 [6]		24	365	0	N/A	0.0069	lb/mmbtu	[2]		lb/mmbtu	[6]	0.127	lb/mmbtu	[2]

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Criteria Pollutant Emission Factors																GHG Emission Factors				Toxic Emission Factors			
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	SOx EF	SOx EF Units		CO EF (MSS)	CO EF (MSS) Units		CO EF	CO EF Units		PM EF	PM EF Units		PM10 EF	PM10 EF Units		PM2.5 EF	PM2.5 EF Units		NH3 EF	NH3 EF Units		% Biogenic		CO2 EF (kg/ mmbtu)		CH4 EF (kg/ mmbtu)	N2O EF (kg/ mmbtu)		Acetaldehyde EF	Acrolein EF	Benzene EF	Ethylbenzene EF
H101	D44	Heater	No change (SCR C814; existing connection)	30	fuel TRS ppmv	[1]	50	ppmv	[6]	10	ppmv	[1]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[1]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H102	D45	Heater	No change (SCR C814; existing connection)	30	fuel TRS ppmv	[1]	50	ppmv	[6]	10	ppmv	[1]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[1]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H301	D47	Heater	Equipment removed																																
H302	D48	Heater	Equipment removed																																
H303	D73	Heater	Equipment removed																																
H304	D74	Heater	Equipment removed																																
H305	D75	Heater	Equipment removed																																
H306	D76	Heater	Equipment removed																																
H350	New	Heater	New installation (Unit B) - Use SCR C77	30	fuel TRS ppmv	[6]	54	ppmv	[6]	50	ppmv	[6]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H351	New	Heater	New installation (Unit B) - Use SCR C77	30	fuel TRS ppmv	[6]	54	ppmv	[6]	50	ppmv	[6]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H401	D691	Incinerator	Modified to operate as Unit A SOx control	30	ppmv	[15]	50	ppmv	[6]	50	ppmv	[6]	0.0165	lb/mm btu	[11]	0.0165	lb/mm btu	[11]	0.0165	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	4.22E-06	2.65E-06	7.84E-06	9.31E-06
H402	C175	Incinerator	Modified to operate as Unit A SOx control	30	ppmv	[15]	50	ppmv	[6]	50	ppmv	[6]	0.0165	lb/mm btu	[11]	0.0165	lb/mm btu	[11]	0.0165	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H501/H502	D46	Heater	No change (SCR C814; existing connection)	30	fuel TRS ppmv	[6]	50	ppmv	[6]	50	ppmv	[6]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[1]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H601	D30	Heater	Equipment removed																																
H602	D31	Heater	Equipment removed																																
H701	D123	Heater	Equipment removed																																
H702	D124	Heater	Equipment removed																																
H703	D125	Heater	Equipment removed																																
H704	D126	Heater	Equipment removed																																
H705	D127	Heater	Equipment removed																																
H801	D26	Heater	Equipment removed																																
H802	D29	Heater	Equipment removed																																
H805	D27	Heater	Equipment removed																																
H860	D28	Heater	Equipment removed																																
H901	D128	Heater	Equipment removed																																
H902	D129	Heater	Equipment removed																																
H905	Removed	Heater	Equipment previously removed from permit																																
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	30	ppmv	[16]	50	ppmv	[6]	50	ppmv	[6]	0.0165	lb/mm btu	[11]	0.0165	lb/mm btu	[11]	0.0165	lb/mmbtu	[8]	0.003	lb/mmbtu	[2]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	30	ppmv	[16]	50	ppmv	[6]	50	ppmv	[6]	0.0165	lb/mm btu	[11]	0.0165	lb/mm btu	[11]	0.0165	lb/mmbtu	[8]	0.003	lb/mmbtu	[2]	0	[3]	53.02	[3]	0.001	0.0001	[3]	4.22E-06	2.65E-06	7.84E-06	9.31E-06
B6	Removed	Boiler	Equipment previously removed from permit																																
B7	D374	Boiler	Connect to existing SCR C794	0.00745	lb/mmbtu	[12]	400	ppmv	[6]	50	ppmv	[6]	0.0075	lb/mm btu	[12]	0.0075	lb/mm btu	[12]	0.0073	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
B8	D375	Boiler	Connect to existing SCR C794	0.00745	lb/mmbtu	[12]	400	ppmv	[6]	50	ppmv	[6]	0.0075	lb/mm btu	[12]	0.0075	lb/mm btu	[12]	0.0073	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
B9	D376	Boiler	Connect to existing SCR C794	0.00745	lb/mmbtu	[12]	400	ppmv	[6]	50	ppmv	[6]	0.0075	lb/mm btu	[12]	0.0075	lb/mm btu	[12]	0.0073	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	3.04E-06	2.65E-06	5.69E-06	6.76E-06
Cogen Turbine	D677	Cogen Turbine	Equipment removed																																
Cogen Duct Burner	D679	Duct Burner	Equipment removed																																
New Flare Pilot/Purge	New	Flare	New installation	0.0006	lb/mmbtu	[2]		lb/mm btu	[2]	0.034	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0074	lb/mm btu	[2]	0.0074	lb/mmbtu	[8]	0.003	lb/mmbtu	[2]	0	[3]	53.02	[3]	0.001	0.0001	[3]	4.22E-06	2.65E-06	7.84E-06	9.31E-06

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emission Factors								Toxic Emission Factors (PAH)														
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Formaldehyde EF	n-Hexane EF	Naphthalene EF	Propylene EF	Toluene EF	Xylenes EF	Toxics EF Units		Profile	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	7,12-Dimethylbenz(a)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	3-Methylchloranthrene
H101	D44	Heater	No change (SCR C814; existing connection)	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H102	D45	Heater	No change (SCR C814; existing connection)	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H301	D47	Heater	Equipment removed																							
H302	D48	Heater	Equipment removed																							
H303	D73	Heater	Equipment removed																							
H304	D74	Heater	Equipment removed																							
H305	D75	Heater	Equipment removed																							
H306	D76	Heater	Equipment removed																							
H350	New	Heater	New installation (Unit B) - Use SCR C77	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H351	New	Heater	New installation (Unit B) - Use SCR C77	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H401	D691	Incinerator	Modified to operate as Unit A SOx control	1.67E-05	6.18E-06	2.94E-07	7.17E-04	3.59E-05	2.67E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H402	C175	Incinerator	Modified to operate as Unit A SOx control	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H501/H502	D46	Heater	No change (SCR C814; existing connection)	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H601	D30	Heater	Equipment removed																							
H602	D31	Heater	Equipment removed																							
H701	D123	Heater	Equipment removed																							
H702	D124	Heater	Equipment removed																							
H703	D125	Heater	Equipment removed																							
H704	D126	Heater	Equipment removed																							
H705	D127	Heater	Equipment removed																							
H801	D26	Heater	Equipment removed																							
H802	D29	Heater	Equipment removed																							
H805	D27	Heater	Equipment removed																							
H860	D28	Heater	Equipment removed																							
H901	D128	Heater	Equipment removed																							
H902	D129	Heater	Equipment removed																							
H905	Removed	Heater	Equipment previously removed from permit																							
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	1.67E-05	6.18E-06	2.94E-07	7.17E-04	3.59E-05	2.67E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
B6	Removed	Boiler	Equipment previously removed from permit																							
B7	D374	Boiler	Connect to existing SCR C794	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
B8	D375	Boiler	Connect to existing SCR C794	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
B9	D376	Boiler	Connect to existing SCR C794	1.21E-05	4.51E-06	2.94E-07	5.20E-04	2.60E-05	1.93E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09
Cogen Turbine	D677	Cogen Turbine	Equipment removed																							
Cogen Duct Burner	D679	Duct Burner	Equipment removed																							
New Flare Pilot/Purge	New	Flare	New installation	1.67E-05	6.18E-06	2.94E-07	7.17E-04	3.59E-05	2.67E-05	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emission Factors (PAH)				Criteria Pollutant Emissions																	
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	2-Methylnaphthalene	Phenanthrene	Pyrene	Toxics (PAH) EF Units	VOC lbs/day	VOC tons/yr	NOx (MSS) lbs/day	NOx (MSS) lbs/hr	NOx lbs/day	NOx tons/yr	SOx (MSS) lbs/day	SOx (MSS) lbs/hr	SOx lbs/day	SOx tons/yr	CO (MSS) lbs/day	CO (MSS) lbs/hr	CO lbs/day	CO tons/yr	PM lbs/day	PM tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr
H101	D44	Heater	No change (SCR C814; existing connection)	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	0.92	0.17	12.99 [7]	0.57	1.87	0.44	1.47 [7]	0.06	1.47	0.27	6.59 [7]	0.29	2.27	0.45	2.26	0.41	2.26	0.41	2.21	0.40
H102	D45	Heater	No change (SCR C814; existing connection)	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	1.60	0.29	22.53 [7]	0.98	3.23	0.76	2.55 [7]	0.11	2.55	0.46	11.43 [7]	0.50	3.94	0.78	3.92	0.71	3.92	0.71	3.84	0.70
H301	D47	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H302	D48	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H303	D73	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H304	D74	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H305	D75	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H306	D76	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H350	New	Heater	New installation (Unit B) - Use SCR C77	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	9.88	1.80	96.17 [7]	4.01	15.74	4.43	6.89 [7]	0.29	6.89	1.26	53.23 [7]	2.22	53.23	9.69	10.59	1.93	10.59	1.93	10.37	1.89
H351	New	Heater	New installation (Unit B) - Use SCR C77	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	9.88	1.80	80.87 [7]	3.64	15.74	3.20	6.89 [7]	0.29	6.89	1.26	53.23 [7]	2.22	53.23	9.53	10.59	1.93	10.59	1.93	10.37	1.89
H401	D691	Incinerator	Modified to operate as Unit A SOx control	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	1.32	0.24	See H402	See H402			0.00 [7]	See H402			See H402	See H402			3.18	0.58	3.18	0.58	3.18	0.58
H402	C175	Incinerator	Modified to operate as Unit A SOx control	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	1.65	0.30	30.28 [7]	1.26	20.46	3.81	24.40 [7]	1.02	24.40	4.45	20.76 [7]	0.86	20.76	3.79	3.97	0.72	3.97	0.72	3.97	0.72
H501/H502	D46	Heater	No change (SCR C814; existing connection)	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	4.61	0.84	28.41 [7]	1.24	4.08	0.96	3.21 [7]	0.13	3.21	0.59	24.84 [7]	1.04	24.84	4.48	4.94	0.90	4.94	0.90	4.84	0.88
H601	D30	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H602	D31	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H701	D123	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H702	D124	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H703	D125	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H704	D126	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H705	D127	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H801	D26	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H802	D29	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H805	D27	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H860	D28	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H901	D128	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H902	D129	Heater	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H905	Removed	Heater	Equipment previously removed from permit					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	3.29	0.60	58.88 [7]	2.45	90.96	16.36	108.49 [7]	4.52	108.49	19.80	92.29 [7]	3.85	92.29	16.84	7.94	1.45	7.94	1.45	7.94	1.45
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	2.47	0.45	See H907	See H907			0.00 [7]	See H907			See H907	See H907			5.96	1.09	5.96	1.09	5.96	1.09
B6	Removed	Boiler	Equipment previously removed from permit					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7	D374	Boiler	Connect to existing SCR C794	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	5.76	1.05	19.45 [7]	0.81	11.67	2.17	7.96 [7]	0.33	7.96	1.45	78.96 [7]	3.29	39.48	7.40	7.96	1.45	7.96	1.45	7.79	1.42
B8	D375	Boiler	Connect to existing SCR C794	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	5.76	1.05	19.45 [7]	0.81	11.67	2.17	7.96 [7]	0.33	7.96	1.45	78.96 [7]	3.29	39.48	7.40	7.96	1.45	7.96	1.45	7.79	1.42
B9	D376	Boiler	Connect to existing SCR C794	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	8.53	1.56	28.81 [7]	1.20	17.28	3.21	11.78 [7]	0.49	11.78	2.15	116.93 [7]	4.87	58.46	10.96	11.78	2.15	11.78	2.15	11.54	2.11
Cogen Turbine	D677	Cogen Turbine	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogen Duct Burner	D679	Duct Burner	Equipment removed					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Flare Pilot/Purge	New	Flare	New installation	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	0.06	0.01	1.04 [7]	0.04	1.04	0.19	0.00 [7]	0.00	0.00	0.00	0.28 [7]	0.01	0.28	0.05	0.06	0.01	0.06	0.01	0.06	0.01

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				GHG Emissions						Toxic Emissions																	
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	CO2 MT/yr	Covered CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr	Covered CO2e MT/yr	Acetaldehyde lbs/hr	Acetaldehyde lbs/yr	Acrolein lbs/hr	Acrolein lbs/yr	Ammonia lbs/hr	Ammonia lbs/yr	Benzene lbs/hr	Benzene lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	Formaldehyde lbs/hr	Formaldehyde lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr	Propylene lbs/hr	Propylene lbs/yr	Sulfuric Acid lbs/hr	Sulfuric Acid lbs/yr	Toluene lbs/hr	Toluene lbs/yr
H101	D44	Heater	No change (SCR C814; existing connection)	5,945	5,945	0.11	0.01	5,951	5,951	0.0000	0.34	0.0000	0.30	0.03	252.01	0.0001	0.64	0.0001	0.76	0.0002	1.35	0.0001	0.51	0.0000	0.03	0.0067	58.26	0.0114	100.14	0.0003	2.91
H102	D45	Heater	No change (SCR C814; existing connection)	10,311	10,311	0.19	0.02	10,321	10,321	0.0001	0.59	0.0001	0.51	0.05	437.07	0.0001	1.11	0.0002	1.32	0.0003	2.35	0.0001	0.88	0.0000	0.06	0.0115	101.05	0.0198	173.68	0.0006	5.05
H301	D47	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H302	D48	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H303	D73	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H304	D74	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H305	D75	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H306	D76	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H350	New	Heater	New installation (Unit B) - Use SCR C77	27,867	27,867	0.53	0.05	27,895	27,895	0.0002	1.60	0.0002	1.39	0.13	1,181.28	0.0003	2.99	0.0004	3.56	0.0007	6.34	0.0003	2.37	0.0000	0.15	0.0312	273.11	0.0536	469.40	0.0016	13.66
H351	New	Heater	New installation (Unit B) - Use SCR C77	27,867	27,867	0.53	0.05	27,895	27,895	0.0002	1.60	0.0002	1.39	0.13	1,181.28	0.0003	2.99	0.0004	3.56	0.0007	6.34	0.0003	2.37	0.0000	0.15	0.0312	273.11	0.0536	469.40	0.0016	13.66
H401	D691	Incinerator	Modified to operate as Unit A SOx control	3,716	3,716	0.07	0.01	3,719	3,719	0.0000	0.30	0.0000	0.19	See H402		0.0000	0.55	0.0000	0.65	0.0001	1.17	0.0000	0.43	0.0000	0.02	0.0032	50.22	See H402		0.0002	2.51
H402	C175	Incinerator	Modified to operate as Unit A SOx control	4,645	4,645	0.09	0.01	4,649	4,649	0.0000	0.27	0.0000	0.23	0.05	460.66	0.0000	0.50	0.0000	0.59	0.0001	1.06	0.0000	0.40	0.0000	0.03	0.0029	45.52	0.1899	1,663.26	0.0001	2.28
H501/H502	D46	Heater	No change (SCR C814; existing connection)	13,005	13,005	0.25	0.02	13,018	13,018	0.0001	0.75	0.0001	0.65	0.06	551.26	0.0002	1.39	0.0002	1.66	0.0003	2.96	0.0001	1.11	0.0000	0.07	0.0145	127.45	0.0250	219.05	0.0007	6.37
H601	D30	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H602	D31	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H701	D123	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H702	D124	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H703	D125	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H704	D126	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H705	D127	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H801	D26	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H802	D29	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H805	D27	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H860	D28	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H901	D128	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H902	D129	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H905	Removed	Heater	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	9,289	9,289	0.18	0.02	9,298	9,298	0.0000	0.53	0.0000	0.46	0.03	549.65	0.0001	1.00	0.0001	1.19	0.0001	2.11	0.0000	0.79	0.0000	0.05	0.0057	91.04	0.8442	7,395.18	0.0003	4.55
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	6,967	6,967	0.13	0.01	6,974	6,974	0.0000	0.55	0.0000	0.35	0.03	412.24	0.0001	1.03	0.0001	1.22	0.0001	2.19	0.0001	0.81	0.0000	0.04	0.0059	94.17	See H907		0.0003	4.71
B6	Removed	Boiler	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7	D374	Boiler	Connect to existing SCR C794	20,668	20,668	0.39	0.04	20,689	20,689	0.0001	1.18	0.0001	1.03	0.10	876.12	0.0003	2.22	0.0003	2.64	0.0005	4.70	0.0002	1.76	0.0000	0.11	0.0231	202.55	0.0619	542.45	0.0012	10.13
B8	D375	Boiler	Connect to existing SCR C794	20,668	20,668	0.39	0.04	20,689	20,689	0.0001	1.18	0.0001	1.03	0.10	876.12	0.0003	2.22	0.0003	2.64	0.0005	4.70	0.0002	1.76	0.0000	0.11	0.0231	202.55	0.0619	542.45	0.0012	10.13
B9	D376	Boiler	Connect to existing SCR C794	30,608	30,608	0.58	0.06	30,638	30,638	0.0002	1.75	0.0002	1.53	0.15	1,297.44	0.0004	3.28	0.0004	3.91	0.0008	6.96	0.0003	2.60	0.0000	0.17	0.0342	299.96	0.0917	803.32	0.0017	15.00
Cogen Turbine	D677	Cogen Turbine	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogen Duct Burner	D679	Duct Burner	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Flare Pilot/Purge	New	Flare	New installation	158	158	0.00	0.00	158	158	0.0000	0.01	0.0000	0.01	0.00	9.35	0.0000	0.02	0.0000	0.03	0.0000	0.05	0.0000	0.02	0.0000	0.00	0.0002	2.14	0.0000	0.33	0.0000	0.11

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emissions		Toxic Emissions (PAH)																		
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Xylenes lbs/hr	Xylenes lbs/yr	Acenaphthene lbs/hr	Acenaphthene lbs/yr	Acenaphthylene lbs/hr	Acenaphthylene lbs/yr	Anthracene lbs/hr	Anthracene lbs/yr	Benzo(a)anthracene lbs/hr	Benzo(a)anthracene lbs/yr	Benzo(a)pyrene lbs/hr	Benzo(a)pyrene lbs/yr	Benzo(b)fluoranthene lbs/hr	Benzo(b)fluoranthene lbs/yr	Benzo(g,h,i)perylene lbs/hr	Benzo(g,h,i)perylene lbs/yr	Benzo(k)fluoranthene lbs/hr	Benzo(k)fluoranthene lbs/yr	Chrysene lbs/hr	Chrysene lbs/yr	Dibenzo(a,h)anthracene lbs/hr	Dibenzo(a,h)anthracene lbs/yr	7,12-Dimethylbenz(a)anthracene lbs/hr
H101	D44	Heater	No change (SCR C814; existing connection)	0.0002	2.17	2.3E-08	2.0E-04	2.3E-08	2.0E-04	3.0E-08	2.6E-04	2.3E-08	2.0E-04	1.5E-08	1.3E-04	2.3E-08	2.0E-04	1.5E-08	1.3E-04	2.3E-08	2.0E-04	2.3E-08	2.0E-04	1.5E-08	1.3E-04	2.0E-07
H102	D45	Heater	No change (SCR C814; existing connection)	0.0004	3.76	3.9E-08	3.4E-04	3.9E-08	3.4E-04	5.2E-08	4.6E-04	3.9E-08	3.4E-04	2.6E-08	2.3E-04	3.9E-08	3.4E-04	2.6E-08	2.3E-04	3.9E-08	3.4E-04	3.9E-08	3.4E-04	2.6E-08	2.3E-04	3.5E-07
H301	D47	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H302	D48	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H303	D73	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H304	D74	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H305	D75	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H306	D76	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H350	New	Heater	New installation (Unit B) - Use SCR C77	0.0012	10.15	1.1E-07	9.3E-04	1.1E-07	9.3E-04	1.4E-07	1.2E-03	1.1E-07	9.3E-04	7.1E-08	6.2E-04	1.1E-07	9.3E-04	7.1E-08	6.2E-04	1.1E-07	9.3E-04	1.1E-07	9.3E-04	7.1E-08	6.2E-04	9.4E-07
H351	New	Heater	New installation (Unit B) - Use SCR C77	0.0012	10.15	1.1E-07	9.3E-04	1.1E-07	9.3E-04	1.4E-07	1.2E-03	1.1E-07	9.3E-04	7.1E-08	6.2E-04	1.1E-07	9.3E-04	7.1E-08	6.2E-04	1.1E-07	9.3E-04	1.1E-07	9.3E-04	7.1E-08	6.2E-04	9.4E-07
H401	D691	Incinerator	Modified to operate as Unit A SOx control	0.0001	1.87	7.8E-09	1.2E-04	7.8E-09	1.2E-04	1.0E-08	1.6E-04	7.8E-09	1.2E-04	5.2E-09	8.2E-05	7.8E-09	1.2E-04	5.2E-09	8.2E-05	7.8E-09	1.2E-04	7.8E-09	1.2E-04	5.2E-09	8.2E-05	6.9E-08
H402	C175	Incinerator	Modified to operate as Unit A SOx control	0.0001	1.69	9.7E-09	1.5E-04	9.7E-09	1.5E-04	1.3E-08	2.1E-04	9.7E-09	1.5E-04	6.5E-09	1.0E-04	9.7E-09	1.5E-04	6.5E-09	1.0E-04	9.7E-09	1.5E-04	9.7E-09	1.5E-04	6.5E-09	1.0E-04	8.6E-08
H501/H502	D46	Heater	No change (SCR C814; existing connection)	0.0005	4.74	4.9E-08	4.3E-04	4.9E-08	4.3E-04	6.6E-08	5.8E-04	4.9E-08	4.3E-04	3.3E-08	2.9E-04	4.9E-08	4.3E-04	3.3E-08	2.9E-04	4.9E-08	4.3E-04	4.9E-08	4.3E-04	3.3E-08	2.9E-04	4.4E-07
H601	D30	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H602	D31	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H701	D123	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H702	D124	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H703	D125	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H704	D126	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H705	D127	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H801	D26	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H802	D29	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H805	D27	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H860	D28	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H901	D128	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H902	D129	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H905	Removed	Heater	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	0.0002	3.38	1.9E-08	3.1E-04	1.9E-08	3.1E-04	2.6E-08	4.1E-04	1.9E-08	3.1E-04	1.3E-08	2.1E-04	1.9E-08	3.1E-04	1.3E-08	2.1E-04	1.9E-08	3.1E-04	1.9E-08	3.1E-04	1.3E-08	2.1E-04	1.7E-07
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	0.0002	3.50	1.5E-08	2.3E-04	1.5E-08	2.3E-04	1.9E-08	3.1E-04	1.5E-08	2.3E-04	9.7E-09	1.5E-04	1.5E-08	2.3E-04	9.7E-09	1.5E-04	1.5E-08	2.3E-04	1.5E-08	2.3E-04	9.7E-09	1.5E-04	1.3E-07
B6	Removed	Boiler	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7	D374	Boiler	Connect to existing SCR C794	0.0009	7.53	7.9E-08	6.9E-04	7.9E-08	6.9E-04	1.0E-07	9.2E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.9E-08	6.9E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.0E-07
B8	D375	Boiler	Connect to existing SCR C794	0.0009	7.53	7.9E-08	6.9E-04	7.9E-08	6.9E-04	1.0E-07	9.2E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.9E-08	6.9E-04	7.9E-08	6.9E-04	5.2E-08	4.6E-04	7.0E-07
B9	D376	Boiler	Connect to existing SCR C794	0.0013	11.15	1.2E-07	1.0E-03	1.2E-07	1.0E-03	1.6E-07	1.4E-03	1.2E-07	1.0E-03	7.8E-08	6.8E-04	1.2E-07	1.0E-03	7.8E-08	6.8E-04	1.2E-07	1.0E-03	1.2E-07	1.0E-03	7.8E-08	6.8E-04	1.0E-06
Cogen Turbine	D677	Cogen Turbine	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogen Duct Burner	D679	Duct Burner	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Flare Pilot/Purge	New	Flare	New installation	0.0000	0.08	6.0E-10	5.3E-06	6.0E-10	5.3E-06	8.0E-10	7.0E-06	6.0E-10	5.3E-06	4.0E-10	3.5E-06	6.0E-10	5.3E-06	4.0E-10	3.5E-06	6.0E-10	5.3E-06	6.0E-10	5.3E-06	4.0E-10	3.5E-06	5.3E-09

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emissions (PAH)													
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	7,12-Dimethylbenz(a)anthracene lbs/yr	Fluoranthene lbs/hr	Fluoranthene lbs/yr	Fluorene lbs/hr	Fluorene lbs/yr	Indeno(1,2,3-cd)pyrene lbs/hr	Indeno(1,2,3-cd)pyrene lbs/yr	3-Methylchloranthrene lbs/hr	3-Methylchloranthrene lbs/yr	2-Methylnaphthalene lbs/hr	2-Methylnaphthalene lbs/yr	Phenanthrene lbs/hr	Phenanthrene lbs/yr	Pyrene lbs/hr	Pyrene lbs/yr
H101	D44	Heater	No change (SCR C814; existing connection)	1.8E-03	3.8E-08	3.3E-04	3.5E-08	3.1E-04	2.3E-08	2.0E-04	2.3E-08	2.0E-04	3.0E-07	2.6E-03	2.1E-07	1.9E-03	6.3E-08	5.5E-04
H102	D45	Heater	No change (SCR C814; existing connection)	3.1E-03	6.5E-08	5.7E-04	6.1E-08	5.3E-04	3.9E-08	3.4E-04	3.9E-08	3.4E-04	5.2E-07	4.6E-03	3.7E-07	3.2E-03	1.1E-07	9.5E-04
H301	D47	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H302	D48	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H303	D73	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H304	D74	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H305	D75	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H306	D76	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H350	New	Heater	New installation (Unit B) - Use SCR C77	8.2E-03	1.8E-07	1.5E-03	1.6E-07	1.4E-03	1.1E-07	9.3E-04	1.1E-07	9.3E-04	1.4E-06	1.2E-02	1.0E-06	8.8E-03	2.9E-07	2.6E-03
H351	New	Heater	New installation (Unit B) - Use SCR C77	8.2E-03	1.8E-07	1.5E-03	1.6E-07	1.4E-03	1.1E-07	9.3E-04	1.1E-07	9.3E-04	1.4E-06	1.2E-02	1.0E-06	8.8E-03	2.9E-07	2.6E-03
H401	D691	Incinerator	Modified to operate as Unit A SOx control	1.1E-03	1.3E-08	2.1E-04	1.2E-08	1.9E-04	7.8E-09	1.2E-04	7.8E-09	1.2E-04	1.0E-07	1.6E-03	7.3E-08	1.2E-03	2.2E-08	3.4E-04
H402	C175	Incinerator	Modified to operate as Unit A SOx control	1.4E-03	1.6E-08	2.6E-04	1.5E-08	2.4E-04	9.7E-09	1.5E-04	9.7E-09	1.5E-04	1.3E-07	2.1E-03	9.2E-08	1.5E-03	2.7E-08	4.3E-04
H501/H502	D46	Heater	No change (SCR C814; existing connection)	3.8E-03	8.2E-08	7.2E-04	7.7E-08	6.7E-04	4.9E-08	4.3E-04	4.9E-08	4.3E-04	6.6E-07	5.8E-03	4.7E-07	4.1E-03	1.4E-07	1.2E-03
H601	D30	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H602	D31	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H701	D123	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H702	D124	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H703	D125	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H704	D126	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H705	D127	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H801	D26	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H802	D29	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H805	D27	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H860	D28	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H901	D128	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H902	D129	Heater	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H905	Removed	Heater	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H907	C531	Incinerator	Increase SOx EF; update to R1109.1 NOx/CO EFs	2.7E-03	3.2E-08	5.2E-04	3.0E-08	4.8E-04	1.9E-08	3.1E-04	1.9E-08	3.1E-04	2.6E-07	4.1E-03	1.8E-07	2.9E-03	5.4E-08	8.6E-04
H908	D569	Duct Burner	Increase firing rate to 15 MMBtu/hr	2.1E-03	2.4E-08	3.9E-04	2.3E-08	3.6E-04	1.5E-08	2.3E-04	1.5E-08	2.3E-04	1.9E-07	3.1E-03	1.4E-07	2.2E-03	4.0E-08	6.4E-04
B6	Removed	Boiler	Equipment previously removed from permit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7	D374	Boiler	Connect to existing SCR C794	6.1E-03	1.3E-07	1.1E-03	1.2E-07	1.1E-03	7.9E-08	6.9E-04	7.9E-08	6.9E-04	1.0E-06	9.2E-03	7.4E-07	6.5E-03	2.2E-07	1.9E-03
B8	D375	Boiler	Connect to existing SCR C794	6.1E-03	1.3E-07	1.1E-03	1.2E-07	1.1E-03	7.9E-08	6.9E-04	7.9E-08	6.9E-04	1.0E-06	9.2E-03	7.4E-07	6.5E-03	2.2E-07	1.9E-03
B9	D376	Boiler	Connect to existing SCR C794	9.1E-03	1.9E-07	1.7E-03	1.8E-07	1.6E-03	1.2E-07	1.0E-03	1.2E-07	1.0E-03	1.6E-06	1.4E-02	1.1E-06	9.6E-03	3.2E-07	2.8E-03
Cogen Turbine	D677	Cogen Turbine	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogen Duct Burner	D679	Duct Burner	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Flare Pilot/Purge	New	Flare	New installation	4.7E-05	1.0E-09	8.8E-06	9.3E-10	8.2E-06	6.0E-10	5.3E-06	6.0E-10	5.3E-06	8.0E-09	7.0E-05	5.7E-09	5.0E-05	1.7E-09	1.5E-05

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

									Fuel				Operating Time				Criteria Pollutant Emission Factors							
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Firing Rate	Fire Rate Units	MSS Firing Rate	MSS Firing Rate Units	Control Device(s)	Fuel Type	Fuel High Heating Value at Standard Temperature of 60 F (Btu/scf)	RenewFG Molecular Weight (lb/lbmol)	RenewFG Carbon Content (lb/lb)	MSS Max Hours per Day	MSS Days per Year	Hours per Day	Days per Year	Excess % O2 Basis for VOC, NOx, CO, NH3 ppmv	Excess % O2 Basis for SOx ppmv	VOC EF	VOC EF Units	NOx EF (MSS)	NOx EF (MSS) Units	NOx EF	NOx EF Units
H151 (SMR Heater)	New	SMR Heater	New installation	600	MMBtu/hr	See H151 Startup Table [10]		LNB, SCR	RenewFG or NG, PSA Offgas	1,059		[4]		[10]	24	365	3	N/A	0.0069	lb/mmbtu [2]	30	ppmv [6]	5	ppmv

SMR Heater MMBtu/hr by Fuel:

101 MMBtu/hr RenewFG or NG	sulfur content of RenewFG
499 MMBtu/hr PSA Offgas	sulfur content of NG

Constants

O2 Concentration (heaters and boilers):	3	percent (dry)
O2 Concentration (turbines):	15	percent (dry)
Natural Gas F-factor (O2-based):	8,710	dscf/mmbtu @ 68 F (40CFR60, App. A, Method 19)
Natural Gas/PSA Off-gas F-factor (O2-based):	9,942	dscf/mmbtu @ 68 F (Calculated from design Heat and Material Balance)
NOx Concentration Conversion Factor:	1.194E-07	ppmv to lbs/scf (40CFR60, App. A, Method 19)
SO2 Concentration Conversion Factor:	1.663E-07	ppmv to lbs/scf
CO Concentration Conversion Factor:	7.270E-08	ppmv to lbs/scf
VOC Concentration Conversion Factor:	4.163E-08	ppmv to lbs/scf
Natural Gas High Heating Value (HHV):	1028	btu/scf (40 CFR 98 default)
Ideal Gas Constant:	385.3	scf/lbmol @ 68 F
	379.4	scf/lbmol @ 60 F

Constants

SCAQMD AER Default Emission Factors (NG):

NOx EF	0.127	lbs/mmbtu
SOx EF	0.0006	lbs/mmbtu
CO EF	0.034	lbs/mmbtu
PM EF	0.0074	lbs/mmbtu
VOC EF	0.007	lbs/mmbtu

SCAQMD AER Default Emission Factors (RenewFG):

PM EF	0.0074	lbs/mmbtu

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Criteria Pollutant Emission Factors																		GHG Emission Factors						Toxic Emission Factors			
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	SOx EF	SOx EF Units		CO EF (MSS)	CO EF (MSS) Units		CO EF	CO EF Units		PM EF	PM EF Units		PM10 EF	PM10 EF Units		PM2.5 EF	PM2.5 EF Units		NH3 EF	NH3 EF Units		% Biogenic		CO2 EF (kg/ mmbtu)		CH4 EF (kg/ mmbtu)	N2O EF (kg/ mmbtu)		Acetaldehyde EF	Acrolein EF	Benzene EF	Ethylbenzene EF
H151 (SMR Heater)	New	SMR Heater	New installation	30	fuel TRS ppmv	[6]	50	ppmv	[6]	10	ppmv	[6]	0.0074	lb/mmbtu	[2]	0.0074	lb/mmbtu	[2]	0.0072	lb/mmbtu	[8]	5	ppmv	[6]	0	[3]	53.02	[3]	0.001	0.0001	[3]	8.82E-07	7.84E-07	1.67E-06	1.96E-06

Constants

GHG Emission Factors (defaults taken from 40 CFR 98 revision used for CARB MRR):

CO2 EF	53.02	kg/mmbtu natural gas, EPA 40 CFR 98 Subpart C default
CH4 EF	1E-03	kg/mmbtu natural gas, EPA 40 CFR 98 Subpart C default
N2O EF	1E-04	kg/mmbtu natural gas, EPA 40 CFR 98 Subpart C default
CH4 EF	3E-03	kg/mmbtu RenewFG, EPA 40 CFR 98 default for petroleum products
N2O EF	6E-04	kg/mmbtu RenewFG, EPA 40 CFR 98 default for petroleum products
CH4 GWP	21	
N2O GWP	310	

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emission Factors								Toxic Emission Factors (PAH)														
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Formaldehyde EF	n-Hexane EF	Naphthalene EF	Propylene EF	Toluene EF	Xylenes EF	Toxics EF Units		Profile	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	7,12-Dimethylbenz(a)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	3-Methylchloranthrene
H151 (SMR Heater)	New	SMR Heater	New installation	3.53E-06	1.27E-06	2.94E-07	1.52E-05	7.65E-06	5.69E-06	lb/mmbtu	[2]	External Combustion	1.8E-09	1.8E-09	2.4E-09	1.8E-09	1.2E-09	1.8E-09	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.6E-08	2.9E-09	2.7E-09	1.8E-09	1.8E-09

Notes:

[1] Taken from Title V permit.
[2] SCAQMD AER default emission factor for natural gas external combustion, converted to lb/mmbtu using a high heating value of 1,020 Btu/scf.
[3] 40CFR 98 Subpart C default for natural combustion (this gives a more conservative CO2e total emission factor than the RenewFG case calculated from 40 CFR 98 Subpart C Equation C-5 (Tier 3).
[4] Calculated from engineering design Heat and Material Balance.
[5] Calculated from 40 CFR 98 Subpart C Equation C-5 (Tier 3): kg CO2/mmbtu = 44/12/836.6 x CC x MW/HHV x 10^6, with HHV in Btu/scf at standard temperature of 60 degrees F, CC in kg C/kg and MW in kg/kgmol.
[6] Estimated.
[7] MSS and normal emissions are included. Normal operating hours are reduced to exclude those hours when operating under MSS.
[8] PM2.5 emissions estimated by multiplying PM10 emissions by the following factors (taken from CEDARS):

Unit Type	PM10 to PM2.5 Multiplier
Heaters/Boilers:	0.979
Thermal Oxidizers, Flares, Duct Burners:	1

[9] The renewable RFG portion of the heat input has a sulfur content of 30 ppmv TRS; the PSA offgas portion of the heat input has a sulfur content no greater than the sulfur content of natural gas, and emissions are estimated using the SCAQMD AER default emission factor for natural gas external combustion, converted to lb/mmbtu using a high heating value of 1,020 Btu/scf.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emission Factors (PAH)				Criteria Pollutant Emissions																			
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	2-Methylnaphthalene	Phenanthrene	Pyrene	Toxics (PAH) EF Units	VOC lbs/day	VOC tons/yr	NOx (MSS) lbs/day		NOx (MSS) lbs/hr	NOx lbs/day	NOx tons/yr	SOx (MSS) lbs/day		SOx (MSS) lbs/hr	SOx lbs/day	SOx tons/yr	CO (MSS) lbs/day		CO (MSS) lbs/hr	CO lbs/day	CO tons/yr	PM lbs/day	PM tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr
H151 (SMR Heater)	New	SMR Heater	New installation	2.4E-08	1.7E-08	4.9E-09	lb/mmbtu [13]	98.82	18.04	157.37	[7]	6.56	99.80	18.79	20.66	[7]	0.86	18.64	3.42	159.69	[7]	6.65	121.52	22.56	105.88	19.32	105.88	19.32	103.66	18.92

Notes:

[10] Maintenance, startup, and shutdown (MSS) emissions include emissions occurring during periods of time when control equipment is not fully operational.
MSS emissions from H101, H102, H350, H351, H501/502, B7, B8, B9, and H151 (SMR Heater) are tabulated here but detailed in separate startup emissions tables.

[11] SCAQMD AER default emission factor for natural gas external combustion, converted to lb/mmbtu using a high heating value of 1,020 Btu/scf, multiplied by a 2.25 safety factor.

[12] Taken from SCAQMD engineering evaluation.

[13] AP-42 Tbl 1.4-3.

[14] Sulfuric acid emissions were estimated from SO2 emissions using the method below, taken from Crane, I.D., Springer, R.D., Siegell, J.H. "New Method Estimates Sulfuric Acid Emissions from Fired Heaters". *Oil & Gas Journal* , Sept. 30, 2002 (pp 78-80).
H2SO4 Emissions (lbs) = SO2 emissions (lbs) / 64 lbs/lbmol SO2 x SO2 to SO3 conversion %/100 x SO3 to H2SO4 conversion %/100 x 98 lbs/lbmol H2SO4
Conversion of SO2 to SO3 was estimated as 12.2%, and conversion of SO3 to H2SO4 was estimated as 100%.

[15] H-401/402 SOx emissions were calculated as SOx lbs/day = Stack scfm x 60 x 24 / 1,000,000 x SOx ppmv @ 0% O2 x (20.9 - Actual % O2) / (20.9% - 0% O2) / 379.4 scf/lbmol x 64.07 lbs/lbmol; the estimated maximum stack flow rate is 6,026 scfm, and the estimated % O2 is 9.3%.

[16] H-907/908 SOx emissions were calculated as SOx lbs/day = Stack scfm x 60 x 24 / 1,000,000 x SOx ppmv @ 0% O2 x (20.9 - Actual % O2) / (20.9% - 0% O2) / 379.4 scf/lbmol x 64.07 lbs/lbmol; the estimated maximum stack flow rate is 21,734 scfm, and the estimated % O2 is 6.6%.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				GHG Emissions						Toxic Emissions																	
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	CO2 MT/yr	Covered CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr	Covered CO2e MT/yr	Acetaldehyde lbs/hr	Acetaldehyde lbs/yr	Acrolein lbs/hr	Acrolein lbs/yr	Ammonia lbs/hr	Ammonia lbs/yr	Benzene lbs/hr	Benzene lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	Formaldehyde lbs/hr	Formaldehyde lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr	Propylene lbs/hr	Propylene lbs/yr	Sulfuric Acid lbs/hr	Sulfuric Acid lbs/yr	Toluene lbs/hr	Toluene lbs/yr
H151 (SMR Heater)	New	SMR Heater	New installation	46,910	46,910	14.00	2.71	48,044	48,044	0.0005	4.64	0.0005	4.12	1.54	13,484.02	0.0010	8.76	0.0012	10.31	0.0021	18.55	0.0008	6.70	0.0002	1.55	0.0091	80.03	0.1450	1,277.94	0.0046	40.19

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emissions		Toxic Emissions (PAH)																			
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	Xylenes lbs/hr	Xylenes lbs/yr	Acenaphthene lbs/hr	Acenaphthene lbs/yr	Acenaphthylene lbs/hr	Acenaphthylene lbs/yr	Anthracene lbs/hr	Anthracene lbs/yr	Benzo(a)anthracene lbs/hr	Benzo(a)anthracene lbs/yr	Benzo(a)pyrene lbs/hr	Benzo(a)pyrene lbs/yr	Benzo(b)fluoranthene lbs/hr	Benzo(b)fluoranthene lbs/yr	Benzo(g,h,i)perylene lbs/hr	Benzo(g,h,i)perylene lbs/yr	Benzo(k)fluoranthene lbs/hr	Benzo(k)fluoranthene lbs/yr	Chrysene lbs/hr	Chrysene lbs/yr	Dibenzo(a,h)anthracene lbs/hr	Dibenzo(a,h)anthracene lbs/yr	7,12-Dimethylbenz(a)anthracene lbs/hr
H151 (SMR Heater)	New	SMR Heater	New installation	0.0034	29.89	1.1E-06	9.3E-03	1.1E-06	9.3E-03	1.4E-06	1.2E-02	1.1E-06	9.3E-03	7.1E-07	6.2E-03	1.1E-06	9.3E-03	7.1E-07	6.2E-03	1.1E-06	9.3E-03	1.1E-06	9.3E-03	7.1E-07	6.2E-03	9.4E-06

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-3: Project Potential Stationary Combustion Emissions Calculations

				Toxic Emissions (PAH)													
Unit	SCAQMD Device Number	Equipment Description	Description of Modification	7,12-Dimethylbenz(a)anthracene lbs/yr	Fluoranthene lbs/hr	Fluoranthene lbs/yr	Fluorene lbs/hr	Fluorene lbs/yr	Indeno(1,2,3-cd)pyrene lbs/hr	Indeno(1,2,3-cd)pyrene lbs/yr	3-Methylchloranthrene lbs/hr	3-Methylchloranthrene lbs/yr	2-Methylnaphthalene lbs/hr	2-Methylnaphthalene lbs/yr	Phenanthrene lbs/hr	Phenanthrene lbs/yr	Pyrene lbs/hr	Pyrene lbs/yr
H151 (SMR Heater)	New	SMR Heater	New installation	8.2E-02	1.8E-06	1.5E-02	1.6E-06	1.4E-02	1.1E-06	9.3E-03	1.1E-06	9.3E-03	1.4E-05	1.2E-01	1.0E-05	8.8E-02	2.9E-06	2.6E-02

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Heaters H101 and H102

Cold Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			12.8	
Heater H101	Cold Start	Startup	6	0.36	4.6	Offline
Heater H101	Cold Start	Phase 1	2.5	0.43	5.5	Intermittent
Heater H101	Cold Start	Phase 2	8.5	0.61	7.8	Intermittent
Heater H101	Cold Start	Phase 3	6	0.57	7.3	Intermittent
Heater H101	Cold Start	Phase 4	7	0.57	7.3	Intermittent
Heater H101	Cold Start	Phase 5	18	0.54	6.9	Intermittent

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			22.2	
Heater H102	Cold Start	Startup	6	0.36	7.9	Offline
Heater H102	Cold Start	Phase 1	2.5	0.43	9.5	Intermittent
Heater H102	Cold Start	Phase 2	8.5	0.61	13.5	Intermittent
Heater H102	Cold Start	Phase 3	6	0.57	12.7	Intermittent
Heater H102	Cold Start	Phase 4	7	0.57	12.7	Intermittent
Heater H102	Cold Start	Phase 5	18	0.54	11.9	Intermittent

	Heater H101	Heater H102
SU/SD Events	10	10
SU/SD Hours	48	48
SU/SD Days	2.00	2.00

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			Phase 5			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H101	Cold Start	**NOx**	60	0.0729	0.33	60	0.0729	0.40	60	0.0729	0.57	60	0.0729	0.53	60	0.0729	0.53	60	0.0729	0.50	5	0.0061	0.08	23.73	0.57	12.99	0.44
Heater H101	Cold Start	**CO**	50	0.0370	0.17	50	0.0370	0.20	50	0.0370	0.29	50	0.0370	0.27	50	0.0370	0.27	50	0.0370	0.25	10	0.0074	0.09	12.04	0.29	6.59	0.45

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			Phase 5			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H102	Cold Start	**NOx**	60	0.0729	0.58	60	0.0729	0.69	60	0.0729	0.98	60	0.0729	0.92	60	0.0729	0.92	60	0.0729	0.87	5	0.0061	0.13	41.16	0.98	22.53	0.76
Heater H102	Cold Start	**CO**	50	0.0370	0.29	50	0.0370	0.35	50	0.0370	0.50	50	0.0370	0.47	50	0.0370	0.47	50	0.0370	0.44	10	0.0074	0.16	20.88	0.50	11.43	0.78

Warm Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			12.8	
Heater H101	Warm Start	Startup	9	0.36	4.6	Offline
Heater H101	Warm Start	Phase 1	9	0.43	5.5	Intermittent

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			22.2	
Heater H102	Warm Start	Startup	9	0.36	7.9	Offline
Heater H102	Warm Start	Phase 1	9	0.43	9.5	Intermittent

	Heater H101	Heater H102
SU/SD Events	10	10
SU/SD Hours	18	18
SU/SD Days	0.75	0.75

Unit	Scenario	Pollutant	Startup			Phase 1			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H101	Warm Start	**NOx**	60	0.0729	0.33	60	0.0729	0.40	5	0.0061	0.08	6.59	0.40	7.06	0.37
Heater H101	Warm Start	**CO**	50	0.0370	0.17	50	0.0370	0.20	10	0.0074	0.09	3.35	0.20	3.91	0.42

Unit	Scenario	Pollutant	Startup			Phase 1			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H102	Warm Start	**NOx**	60	0.0729	0.58	60	0.0729	0.69	5	0.0061	0.13	11.44	0.69	12.25	0.64
Heater H102	Warm Start	**CO**	50	0.0370	0.29	50	0.0370	0.35	10	0.0074	0.16	5.80	0.35	6.79	0.73

Maximum Emissions

Unit	Pollutant	lb/hr	lb/day	TPY
H101	**NOx**	0.57	12.99	0.44
H101	**CO**	0.29	6.59	0.45
H102	**NOx**	0.98	22.53	0.76
H102	**CO**	0.50	11.43	0.78

Notes:

1. NOx startup emission factor per Title V Permit.

2. The operation of the SCR is initiated after the Startup phase, however due to continued fluctuations in process rates throughout the startup phases, the operation of the SCR is intermittment, and not guaranteed to meet the guaranteed emission limits.

3. The phases of startup are described below:

Startup: Initial Startup of burners – warm the circulating hydrogen in the unit and inventory the hot oil system
Phase 1 Introduce startup oil
Phase 2 Circulation of startup oil
Phase 3 Introduce and run feed oil
Phase 4 FR production increases propane to fuel gas and increases btu value of fuel gas
Phase 5 First stage product is on spec, introduce feed to second stage

4. Estimated heater loads and hours in each phase of startup estimated based on H501/502 data. The heat input data has been adjusted according to the rated capacity of each heater.

H 501/502 (MMBtu/hr)	% of Load
28	
10	0.36
12	0.43
17	0.61
16	0.57
16	0.57
15	0.54

Constants:

Fd	8710 scf/mmbtu
Percent O2	3
NOx Concentraion Conversion Factor:	1.194E-07 ppmv to lbs/scf (40CFR60, App. A, Method 19)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Heater H151

Heater Commissioning Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			600	
Heater H151	Commissioning	Startup	144	0.12	72.0	Intermittent

	Heater H151
SU/SD Events	1
SU/SD Hours	144
SU/SD Days	6.00

Unit	Scenario	Pollutant	Startup												SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr										ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H151	Commissioning	**NOx**	30	0.0364	2.62										5	0.0069	4.16	377.69	4.16	99.80	18.10
Heater H151	Commissioning	**SOx**	30	0.0048	0.34												0.78	49.58	0.78	18.64	3.37
Heater H151	Commissioning	**CO**	50	0.0370	2.66										10	0.0084	5.06	383.26	5.06	121.52	22.00

Cold Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			600	
Heater H151	Cold Start	Startup	48	0.3	180.0	Intermittent

	Heater H151
SU/SD Events	10
SU/SD Hours	48
SU/SD Days	2.00

Unit	Scenario	Pollutant	Startup												SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr										ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H151	Cold Start	**NOx**	30	0.0364	6.56										5	0.0069	4.16	314.74	6.56	157.37	18.79
Heater H151	Cold Start	**SOx**	30	0.0048	0.86												0.78	41.32	0.86	20.66	3.42
Heater H151	Cold Start	**CO**	50	0.0370	6.65										10	0.0084	5.06	319.38	6.65	159.69	22.56

Warm Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			600	
Heater H151	Warm Start	Startup	18	0.3	180.0	Intermittent

	Heater H151
SU/SD Events	10
SU/SD Hours	18
SU/SD Days	0.75

Unit	Scenario	Pollutant	Startup												SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr										ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H151	Warm Start	**NOx**	30	0.0364	6.56										5	0.0069	4.16	118.03	6.56	142.98	18.43
Heater H151	Warm Start	**SOx**	30	0.0048	0.86												0.78	15.49	0.86	20.15	3.41
Heater H151	Warm Start	**CO**	50	0.0370	6.65										10	0.0084	5.06	119.77	6.65	150.15	22.32

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Heater H151

Maximum Emissions

Unit	Pollutant	lb/hr	lb/day	TPY
H151 (SMR Heater)	**NOx**	6.56	157.37	18.79
H151 (SMR Heater)	**SOx**	0.86	20.66	3.42
H151 (SMR Heater)	**CO**	6.65	159.69	22.56

Notes:

1. SOx proposed EF estimated for combustion of renewable fuel gas and PSA off gas when SCR is online and heater is operating at full load.

	PSA Off Gas	Renewable Fuel Gas	
SOx EF	0.0006	0.00478	lbs/mmbtu
Fuel Heat Value	499	101	MMBtu/hr

2. The SCR is not assumed to be fully operating until it reaches 1700 deg F. As such, these calculations assume that the SCR cannot achieve 5 ppmv NOx until the end of the period at which the SCR begins to come online.

3. The startup scenarios are described as follows:

Scenario 1: Refractory Curing, Boil Out, Initial Heater Commissioning
Scenario 2: Heater Cold Start-up: Occurs when the heater has been completely shutdown for maintenance or anytime the temperature drops below normal operating ranges.
Scenario 3: Heater Hot Start-up, Equipment Malfunction: When heater trips offline for any reason other than combustion.

4. Hours in each phase of startup were estimated per per engineering design.

Constants:

Fd	Natural Gas	8,710	scf/mmbtu	(Startup)
	Natural Gas/PSA Offgas Mixture	9,942	scf/mmbtu	(SCR Online and Full Load)
Percent O2		3		
NOx Concentraion Conversion Factor:		1.194E-07	ppmv to lbs/scf (40CFR60, App. A, Method 19)	
Ideal Gas Constant:		379.4	scf/lbmol @ 60 F	
Fuel High Heating Value at Standard Temperature of 60 F (Btu/scf)		1,059	Btu/scf	

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Heaters H350 and H351

Heater Commissioning Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H350	Commissioning	Startup	105	0.12	7.2	Offline

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H351	Commissioning	Startup	78	0.12	7.2	Offline

	Heater H350	Heater H351
SU/SD Events	1	1
SU/SD Hours	105	105
SU/SD Days	4.38	4.38

Unit	Scenario	Pollutant	Startup															SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr													ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H350	Commissioning	**NOx**	60	0.0729	0.52													9	0.0109	0.66	55.08	0.66	15.74	2.87
Heater H350	Commissioning	**CO**	54	0.0399	0.29													50	0.0370	2.22	30.18	2.22	53.23	9.61

Unit	Scenario	Pollutant	Startup															SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr													ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H351	Commissioning	**NOx**	60	0.0729	0.52													9	0.0109	0.66	40.92	0.66	15.74	2.86
Heater H351	Commissioning	**CO**	54	0.0399	0.29													50	0.0370	2.22	22.42	2.22	53.23	9.61

Cold Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H350	Cold Start	Startup	78	0.70	42.0	Offline
Heater H350	Cold Start	Phase 1	6	0.70	42.0	Intermittent
Heater H350	Cold Start	Phase 2	3	0.92	55.0	Intermittent
Heater H350	Cold Start	Phase 3	6	0.92	55.0	Intermittent
Heater H350	Cold Start	Phase 4	6	0.92	55.0	Intermittent
Heater H350	Cold Start	Phase 5	18	0.92	55.0	Intermittent

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H351	Cold Start	Startup	78	0	0.0	Offline
Heater H351	Cold Start	Phase 1	6	0	0.0	Intermittent
Heater H351	Cold Start	Phase 2	3	0	0.0	Intermittent
Heater H351	Cold Start	Phase 3	6	0.42	25	Intermittent
Heater H351	Cold Start	Phase 4	6	0.58	35	Intermittent
Heater H351	Cold Start	Phase 5	18	0.83	50	Intermittent

	Heater H350	Heater H351
SU/SD Events	10	10
SU/SD Hours	117	117
SU/SD Days	4.88	4.88

Notes:

Heater H-351 is a reboiler, and cannot be fired until circulating on startup oil.

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			Phase 5			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H350	Cold Start	**NOx**	60	0.0729	3.06	60	0.0729	3.06	60	0.0729	4.01	60	0.0729	4.01	60	0.0729	4.01	60	0.0729	4.01	9	0.0109	0.66	389.27	4.01	96.17	4.43
Heater H350	Cold Start	**CO**	54	0.0399	1.68	54	0.0399	1.68	54	0.0399	2.20	54	0.0399	2.20	54	0.0399	2.20	54	0.0399	2.20	50	0.0370	2.22	213.31	2.22	53.23	9.48

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			Phase 5			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H351	Cold Start	**NOx**	60	0.0729	0.00	60	0.0729	0.00	60	0.0729	0.00	60	0.0729	1.82	60	0.0729	2.55	60	0.0729	3.64	9	0.0109	0.66	91.80	3.64	80.87	2.95
Heater H351	Cold Start	**CO**	54	0.0399	0.00	54	0.0399	0.00	54	0.0399	0.00	54	0.0399	1.00	54	0.0399	1.40	54	0.0399	2.00	50	0.0370	2.22	50.30	2.22	53.23	8.67

Warm Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H350	Warm Start	Startup	6	0.70	42.0	Intermittent
Heater H350	Warm Start	Phase 1	3	0.92	55.0	Intermittent
Heater H350	Warm Start	Phase 2	6	0.92	55.0	Intermittent
Heater H350	Warm Start	Phase 3	6	0.92	55.0	Intermittent
Heater H350	Warm Start	Phase 4	18	0.92	55.0	Intermittent

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			60	
Heater H351	Warm Start	Startup	6	0	0.0	Intermittent
Heater H351	Warm Start	Phase 1	3	0	0.0	Intermittent
Heater H351	Warm Start	Phase 2	6	0.42	25	Intermittent
Heater H351	Warm Start	Phase 3	6	0.58	35	Intermittent
Heater H351	Warm Start	Phase 4	18	0.83	50	Intermittent

	Heater H350	Heater H351
SU/SD Events	10	10
SU/SD Hours	39	39
SU/SD Days	1.63	1.63

Notes:

Heater H-351 is a reboiler, and cannot be fired until circulating on startup oil.

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H350	Warm Start	**NOx**	60	0.0729	3.06	60	0.0729	4.01	60	0.0729	4.01	60	0.0729	4.01	60	0.0729	4.01	9	0.0109	0.66	150.59	4.01	96.17	3.50
Heater H350	Warm Start	**CO**	54	0.0399	1.68	54	0.0399	2.20	54	0.0399	2.20	54	0.0399	2.20	54	0.0399	2.20	50	0.0370	2.22	82.52	2.22	53.23	9.69

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H351	Warm Start	**NOx**	60	0.0729	0.00	60	0.0729	0.00	60	0.0729	1.82	60	0.0729	2.55	60	0.0729	3.64	9	0.0109	0.66	91.80	3.64	80.87	3.20
Heater H351	Warm Start	**CO**	54	0.0399	0.00	54	0.0399	0.00	54	0.0399	1.00	54	0.0399	1.40	54	0.0399	2.00	50	0.0370	2.22	50.30	2.22	53.23	9.53

Maximum Emissions

Unit	Pollutant	lb/hr	lb/day	TPY
H350	**NOx**	4.01	96.17	4.43
H350	**CO**	2.22	53.23	9.69
H351	**NOx**	3.64	80.87	3.20
H351	**CO**	2.22	53.23	9.53

Notes:

1. The operation of the SCR is initiated after the Startup phase, however due to continued fluctuations in process rates throughout the startup phases, the operation of the SCR is intermittment, and not guaranteed to meet the guaranteed emission limits.

AltAir Paramount Refinery -

Renewable Fuels Project

Attachment A: Emissions Calculations

Startup Scenario Evaluation: Heaters H350 and H351

2. The phases of startup are described below:		Temp (F)
Startup:	Circulation of Hydrogen to heat reactors and catalyst from 100 to 200 deg F.	350
Phase 1	Raise pressure from 300 psig to 900 psig at 100 psi/hr	350
Phase 2	Introduce startup oil.	450
Phase 3	Circulation of startup oil.	500
Phase 4	Introduction of raw feed oil	550
Phase 5	First stage on specification.	650

3. Hours in each phase of startup were estimated per per engineering design.

Constants:

Fd	8710	scf/mmbtu
Percent O2	3	
NOx Concentraion Conversion Factor:	1.194E-07	ppmv to lbs/scf (40CFR60, App. A, Method 19)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Heater H501/502

Cold Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			28	
Heater H501/502	Cold Start	Startup	6	0.36	10	Offline
Heater H501/502	Cold Start	Phase 1	2.5	0.43	12	Intermittent
Heater H501/502	Cold Start	Phase 2	8.5	0.61	17	Intermittent
Heater H501/502	Cold Start	Phase 3	6	0.57	16	Intermittent
Heater H501/502	Cold Start	Phase 4	7	0.57	16	Intermittent
Heater H501/502	Cold Start	Phase 5	18	0.54	15	Intermittent

	Heater H501/502
SU/SD Events	10
SU/SD Hours	48
SU/SD Days	2.00

Unit	Scenario	Pollutant	Startup			Phase 1			Phase 2			Phase 3			Phase 4			Phase 5			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H501/502	Cold Start	**NOx**	60	0.0729	0.73	60	0.0729	0.87	60	0.0729	1.24	60	0.0729	1.17	60	0.0729	1.17	60	0.0729	1.09	5	0.0061	0.17	51.91	1.24	28.41	0.96
Heater H501/502	Cold Start	**CO**	50	0.0370	0.37	50	0.0370	0.44	50	0.0370	0.63	50	0.0370	0.59	50	0.0370	0.59	50	0.0370	0.55	50	0.0370	1.04	26.34	1.04	24.84	4.42

Warm Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase	Load	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			28	
Heater H501/502	Warm Start	Startup	9	0.36	10	Offline
Heater H501/502	Warm Start	Phase 1	9	0.43	12	Intermittent
Heater H501/502	Warm Start	Phase 2				
Heater H501/502	Warm Start	Phase 3				
Heater H501/502	Warm Start	Phase 4				
Heater H501/502	Warm Start	Phase 5				

	Heater H501/502
SU/SD Events	10
SU/SD Hours	18
SU/SD Days	0.75

Unit	Scenario	Pollutant	Startup			Phase 1															SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr													ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Heater H501/502	Warm Start	**NOx**	60	0.0729	0.73	60	0.0729	0.87													5	0.0061	0.17	14.43	0.87	15.45	0.80
Heater H501/502	Warm Start	**CO**	50	0.0370	0.37	50	0.0370	0.44													50	0.0370	1.04	7.32	1.04	24.84	4.48

Maximum Emissions

Unit	Pollutant	lb/hr	lb/day	TPY
H501/H502	**NOx**	1.24	28.41	0.96
H501/H502	**CO**	1.04	24.84	4.48

Notes:

1. NOx and CO startup emission factors are engineering estimates based on combustion of renewable fuel gas.

2. The operation of the SCR is initiated after the Startup phase, however due to continued fluctuations in process rates throughout the startup phases, the operation of the SCR is intermittment, and not guaranteed to meet the guaranteed emission limits.

3. The phases of startup are described below:

Startup: Initial Startup of burners – warm the circulating hydrogen in the unit and inventory the hot oil system
Phase 1 Introduce startup oil
Phase 2 Circulation of startup oil
Phase 3 Introduce and run feed oil
Phase 4 FR production increases propane to fuel gas and increases btu value of fuel gas
Phase 5 First stage product is on spec, introduce feed to second stage

Constants:

Fd	8710 scf/mmbtu
Percent O2	3
NOx Concentraion Conversion Factor:	1.194E-07 ppmv to lbs/scf (40CFR60, App. A, Method 19)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations
Startup Scenario Evaluation: Boilers 7, 8, and 9

Cold Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			44.5	
Boiler 7	Cold Start	Startup	24	0.25	11.1	Offline

	Boiler 7	Boiler 8	Boiler 9
SU/SD Events	10	10	10
SU/SD Hours	24	24	24
SU/SD Days	1.00	1.00	1.00

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			44.5	
Boiler 8	Cold Start	Startup	24	0.25	11.1	Offline

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			65.9	
Boiler 9	Cold Start	Startup	24	0.25	16.5	Offline

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 7	Cold Start	**NOx**	60	0.0729	0.81	9	0.0109	0.49	19.45	0.81	19.45	2.17
Boiler 7	Cold Start	**CO**	400	0.2957	3.29	50	0.0370	1.64	78.96	3.29	78.96	7.40

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 8	Cold Start	**NOx**	60	0.0729	0.81	9	0.0109	0.49	19.45	0.81	19.45	2.17
Boiler 8	Cold Start	**CO**	400	0.2957	3.29	50	0.0370	1.64	78.96	3.29	78.96	7.40

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 9	Cold Start	**NOx**	60	0.0729	1.20	9	0.0109	0.72	28.81	1.20	28.81	3.21
Boiler 9	Cold Start	**CO**	400	0.2957	4.87	50	0.0370	2.44	116.93	4.87	116.93	10.96

Warm Start Scenario

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			44.5	
Boiler 7	Warm Start	Startup	3	0.25	11.1	Offline

	Boiler 7	Boiler 8	Boiler 9
SU/SD Events	10	10	10
SU/SD Hours	3	3	3
SU/SD Days	0.13	0.13	0.13

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			44.5	
Boiler 8	Warm Start	Startup	3	0.25	11.1	Offline

Unit	Scenario	Startup Phase	Duration of Phase (Hrs)	Load at Phase	MMBtu/hr	SCR Status
		Max Firing Rate (MMBtu/hr)			65.9	
Boiler 9	Warm Start	Startup	3	0.25	16.5	Offline

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 7	Warm Start	**NOx**	60	0.0729	0.81	9	0.0109	0.49	2.43	0.81	12.64	2.13
Boiler 7	Warm Start	**CO**	400	0.2957	3.29	50	0.0370	1.64	9.87	3.29	44.41	7.23

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 8	Warm Start	**NOx**	60	0.0729	0.81	9	0.0109	0.49	2.43	0.81	12.64	2.13
Boiler 8	Warm Start	**CO**	400	0.2957	3.29	50	0.0370	1.64	9.87	3.29	44.41	7.23

Unit	Scenario	Pollutant	Startup			SCR Online & Full Load			SU	Worst-Case Emissions		
			ppmv	lb/MMBtu	lb/hr	ppmv	lb/MMBtu	lb/hr	lb/SU Event	lb/hr	lb/day	TPY
Boiler 9	Warm Start	**NOx**	60	0.0729	1.20	9	0.0109	0.72	3.60	1.20	18.72	3.16
Boiler 9	Warm Start	**CO**	400	0.2957	4.87	50	0.0370	2.44	14.62	4.87	65.77	10.71

AltAir Paramount Refinery -

Renewable Fuels Project

Attachment A: Emissions Calculations

Startup Scenario Evaluation: Boilers 7, 8, and 9

Maximum Emissions

Unit	Pollutant	lb/hr	lb/day	TPY
B7	**NOx**	0.81	19.45	2.17
B7	**CO**	3.29	78.96	7.40
B8	**NOx**	0.81	19.45	2.17
B8	**CO**	3.29	78.96	7.40
B9	**NOx**	1.20	28.81	3.21
B9	**CO**	4.87	116.93	10.96

Notes:

1. CO startup emission factor is based on existing uncontrolled emission factors from the boilers per A/N 448615, 448616, and 448617.

2. NOx startup emission factor is engineering estimate based on combustion of renewable fuel gas.

3. The phases of startup are described below:

		Temp (F)
Cold Startup	Bring the boiler up to the manufacturers recommended heat and exhaust temps to start the SCR on ammonia at the end of the startup period.	200
Warm Startup	Assumed boiler had cooled to 50 psig steam pressure before restart eliminating the first three hours of the warm-up – heavily conservative.	200

4. Hours in each phase of startup were estimated per per engineering design.

Constants:

Fd	8710	scf/mmbtu
Percent O2	3	
NOx Concentraion Conversion Factor:	1.194E-07	ppmv to lbs/scf (40CFR60, App. A, Method 19)

Table A-4: Project Potential Hydrogen Generation Unit Process Emissions Calculations

					Fuel			Operating Time		GHG Emission Factors	CriteriaPollutant & Toxic Emissions									
Unit	SCAQMD Device Number	Description of Modification	Process Rate	Process Rate Units	Feed	Feed Molecular Weight (lb/lbmol)	Feed Carbon Content (lb/lb)	Hours per Day	Days per Year	CO2 EF (kg/ mmscf)	VOC lbs/day	VOC tons/yr	CO lbs/day	CO tons/yr	Ammonia lbs/hr	Ammonia lbs/yr	Methanol lbs/hr	Methanol lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr
Hydrogen Generation Unit Process Emissions	New	New installation	28.30	MMSCFD [1]	NG	17.36	0.7347	24	365	55,901.20 [2]	12.33	2.25	0.00	0.00	0.00	6.34	0.37	3,220.52	0.00	8.14

Notes:

[1] 1,212 MMBtu/hr HHV natural gas feed for 75 MMSCFD Hydrogen production, taken from 5.4 UTL H2 Generation Plant RevE provided by Air Products.

[2] Calculated using equation P-1 of 40CFR 98.163: EF (kg CO2/MMscf) = 44/12/MVC x CC x MW x 10^6, where MVC = 836.6 scf/kg-mol at 60 F.

[3] Some VOCs, CO, CO2, and ammonia are released from the Hydrogen Generation Unit process vents. These vents will primarily release water vapor/steam with trace amounts of the pollutants shown in the table below. Hourly emissions from each vent were estimated from engineering design data. Total vent emissions are summed up in the table above after applying a safety multiplier of 20. All CO2 is accounted for assuming all carbon in the Hydgrogen Generation Unit feed converts to CO2.

Hydrogen Generation Unit Vent Contingency Factor: 2000%

	Operating Time		Emissions (lb/hr)												
Process Vent	Hours per Day	Days per Year	VOC	CO	Ammonia	Methanol	Hexane	Propane	Butane	Isobutane	Pentane	Isopentane	Ethanol	Formic Acid	Acetic Acid
Deaerator Vent	24	365	0.37	0.0E+00	7.2E-04	3.6E-01							1.2E-03	4.3E-03	8.8E-03
Standpipe Vent	24	365	0.13	0.0E+00	0.0E+00	1.1E-02							0.0E+00	7.6E-02	3.8E-02
Compressor 1st Stage NG	24	365	0.02	1.0E-04			9.3E-04	7.5E-03	1.8E-03	1.6E-03	1.6E-03	4.3E-03			

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Attachment A: Emissions Calc

Table A-4: Project Potential H

		GHG Emissions			
Unit	SCAQMD Device Number	CO2 MT/yr	Covered CO2 MT/yr	CO2e MT/yr	Covered CO2e MT/yr
Hydrogen Generation Unit Process Emissions	New	577,344	577,344	577,344	577,344

Combined CO2e Emissions from Hydrogen Generation Unit Process Emissions + H151 (SMR Heater) Combustion Emissions (MT/yr):
625,388

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Attachment A: Emissions Calculations

Table A-5: Project Potential Filter Media Transfer Emissions Calculations

						Operating Time		Criteria Pollutant Emission Factors			Criteria Pollutant Emissions						Toxic Emissions			
Unit	SCAQMD Device Number	Description of Modification	Throughput (tons/day)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year	PM EF (lbs/ ton)	PM10 EF (lbs/ ton)	PM2.5 EF (lbs/ ton)	PM lbs/day	PM tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr	Sulfuric Acid lbs/hr	Sulfuric Acid lbs/yr	Silica, Crystln lbs/hr	Silica, Crystln lbs/yr
Pretreat Filter Media Transfers	New	New unit	1,330	Filter	99.68%	24	365	0.00039 [2]	0.00019 [2]	0.00019 [3]	0.51	0.09	0.26	0.05	0.26	0.05	0.0008	6.87	0.0021	18.07

Notes:

[1] Maximum filter media throughput is provided below, by material:

				Operating Time		Uncontrolled Emission Factors			Criteria Pollutant Emissions						Toxic Emissions			
Material	Throughput (ton/day)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	PM EF (lbs/ ton)	PM10 EF (lbs/ ton)	PM2.5 EF (lbs/ ton)	PM lbs/day	PM tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr	Sulfuric Acid lbs/hr	Sulfuric Acid lbs/yr	Silica, Crystln lbs/hr	Silica, Crystln lbs/yr
Bleaching Earth Silos (2)	285	Silo Filter	99.1%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.31	0.06	0.15	0.03	0.15	0.03	0.0006	5.62	0	0
Bleaching Earth Bin	285	Bin Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.03	0.01	0.02	0.00	0.02	0.00	0.0001	0.62	0	0
Bleaching Earth Hopper	285	Hopper Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.03	0.01	0.02	0.00	0.02	0.00	0.0001	0.62	0	0
Filter Aid Silo	55	Silo Filter	99.1%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.06	0.01	0.03	0.01	0.03	0.01	0	0	0.0012	10.84
Filter Aid Bin 1	55	Bin Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Filter Aid Hopper 1	55	Hopper Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Filter Aid Bin 2	55	Bin Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Filter Aid Hopper 2	55	Hopper Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Filter Aid Bin 3	55	Bin Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Filter Aid Hopper 3	55	Hopper Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.01	0.00	0.00	0.00	0.00	0.00	0	0	0.0001	1.20
Silica Silo	30	Silo Filter	99.1%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.03	0.01	0.02	0.00	0.02	0.00	0	0	0	0
Silica Bin	30	Bin Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0
Silica Hopper	30	Hopper Filter	99.9%	24	365	0.12 [2]	0.06 [2]	0.06 [3]	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0

[2] Uncontrolled PM and PM10 emission factors were taken from EPA AP-42 Table 11.24-2 (0.12 lbs/ton for PM; 0.06 lbs/ton for PM10; values for low-moisture ore, material handling and transfer - all minerals except bauxite).
Controlled PM and PM10 emission factors were calculated by applying a filter efficiency provided by the manufacturer.

Silo Filter	99.1%	*
Bin Filter	99.9%	**
Hopper Filter	99.9%	**

* Mfg guarantee @ particle diameters of 1 um.
** Mfg guarantee (99.9%) @ particle diameters of 1.2 um.
*** Secondary filters downstream of the bins are for equipment protection. No control efficiency is calculated for the secondary filters.

[3] PM2.5 emissions were estimated to be equal to PM10 emissions.
[4] The bleaching earth and filter aid materials contain the following toxics, per the SDS:

	Sulfuric Acid wt %	Crystalline Silica wt %
Bleaching Earth Perform 400	5%	
Filter Aid		50%

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Attachment A: Emissions Calculations

Table A-6: Project Potential Cooling Tower Emissions Calculations

							Operating Time		Criteria Pollutant Emission Factors				Emissions					
													VOC		PM		PM10	
Unit	SCAQMD Device Number	Description of Modification	Circulation Rate (gpm)	TDS ppmw	Drift Loss %	Control Device(s)	Hours per Day	Days per Year	VOC EF (lbs/ MMgal)	PM EF (lbs/ MMgal)	PM10 EF (lbs/ MMgal)	PM2.5 EF (lbs/ MMgal)	VOC lbs/day	VOC tons/yr	PM lbs/day	PM tons/yr	PM10 lbs/day	PM10 tons/yr
Y-800/801/802 & Y-501/502	N/A	Install additional pumping and drift eliminators	45000	3500	0.0005	Drift Eliminator	24	365	0.7 [2]	0.2 [3]	0.1 [1]	0.1 [3]	45.36	8.28	13.51	2.47	9.46	1.73
Y-600	N/A	Equipment removed											0	0	0	0	0	0

Notes:

[1] Calculated from the concentration of total dissolved solids (TDS) in circulating water and the drift loss of circulating water using Equation 2 of the SCAQMD Guidelines for Calculating Emissions from Cooling Towers (Nov. 2019).

[2] Taken from AP-42 Tbl 5.1-3.

[3] The PM emission factor is estimated assuming PM10 is 70% of total PM; the PM2.5 emission factor is estimated as the PM10 emission factor multiplied by 0.6; these fractions were taken from the SCAQMD "Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresolds," (Oct. 2006); accessed at http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2 on 4/13/21.

[4] A 36,000 gpm circulation rate is needed; a 25% safety factor was applied for the emissions calculations, resulting in a circulation rate of 45,000 gpm.

[5] Toxic emissions are calculated by multiplying VOC emissions by estimated worst-case toxic weight fractions. The toxic weight fractions were estimated as 10% of the maximum concentration of any toxics found among the process units where the cooling water is used.

[6] For modeling purposes, it was estimated that 50% of the emissions were from Y-800/801/802 and 50% of the emissions were from Y-501/502.

Table A-6: Project Potential Cooling Tower Emissions Calculations

			Emissions															
			PM2.5		Ammonia		1,2-Dichlorobenzene		Hexane (n)		Hydrogen Chloride		Hydrogen Sulfide		Propylene		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	PM2.5 lbs/day	PM2.5 tons/yr	Ammonia lbs/hr	Ammonia lbs/yr	1,2-Dichlorobenzene lbs/hr	1,2-Dichlorobenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Chloride lbs/hr	Hydrogen Chloride lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Propylene lbs/hr	Propylene lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
Y-800/801/802 & Y-501/502	N/A	Install additional pumping and drift eliminators	5.67	1.04	0.01	119.04	0.00	0.33	0.02	165.56	0.00	0.17	0.01	87.25	0.00	35.10	0.00	0.66
Y-600	N/A	Equipment removed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-7: Project Potential Load Rack
Emissions Calculations

											Fuel		
Unit	SCAQMD Device Number	Loading/ Unloading	Description of Modification	Reloc-ated	Daily Throughput (bbl/day)	Monthly Throughput (gal/mo)	Control Device(s)	Control Efficiency (%)	Capture Efficiency (%)	Saturation Factor	Commodity	Commodity Vapor Molecular Weight (lb/lbmol)	Commodity Vapor Pressure (psia)
Rack 19	D224	Loading	Throughput limit change (emissions calculated assuming gasoline vapor); connect to VRS	N	8,400	7,560,000	H-907	99.5	100	1 [1]	Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel	62	10.99
Rack 80/81	D200	Loading	Product/tput change from asphalt to distillate; remove mist eliminator; connect to VRS	Y	8,400	7,560,000	H-907	99.5	100	1 [1]	Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel	62	10.99
Rack 20	D231	Loading	Throughput limit change	N	9,000	8,400,000	H-907	99.5	100	1 [1]	Gasoline, Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel	62	10.99
Rack 21	D233	Loading	Throughput limit change; change from 5 to 4 arms	N	9,000	8,400,000	H-907	99.5	100	1 [1]	Gasoline, Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel	62	10.99
Rack 60/61 Loading	D192	Loading	Product/tput change from asphalt to distillate; remove mist eliminator; connect to VRS	Y	8,640	5,040,000	H-907	99	100	1 [1]	Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel, Blended Jet Fuel	130	0.1

Table A-7: Project Potential Load Rack Emissions Calculations

							Stack Emissions											
			Operating Time		Emission Factors		VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Loading/ Unloading	Hours per Day	Days per Year	Stack VOC EF (lbs/1,000 gal loaded)	Toxic Profile	Stack VOC lbs/day	Stack VOC tons/yr	Stack Benzene lbs/hr	Stack Benzene lbs/yr	Stack Cyclohexane lbs/hr	Stack Cyclohexane lbs/yr	Stack Ethylbenzene lbs/hr	Stack Ethylbenzene lbs/yr	Stack n-Hexane lbs/hr	Stack n-Hexane lbs/yr	Stack Hydrogen Sulfide lbs/hr	Stack Hydrogen Sulfide lbs/yr
Rack 19	D224	Loading	24	365	0.0804	Gasoline (TVP 10.99)	28.36	3.65	0.0016	7.77	0.0006	3.03	0.0001	0.51	0.0133	64.29	0.0000	0.00
Rack 80/81	D200	Loading	24	365	0.0804	Gasoline (TVP 10.99)	28.36	3.65	0.0016	7.77	0.0006	3.03	0.0001	0.51	0.0133	64.29	0.0000	0.00
Rack 20	D231	Loading	24	365	0.0804	Gasoline (TVP 10.99)	30.39	4.05	0.0017	8.63	0.0007	3.36	0.0001	0.57	0.0142	71.43	0.0000	0.00
Rack 21	D233	Loading	24	365	0.0804	Gasoline (TVP 10.99)	30.39	4.05	0.0017	8.63	0.0007	3.36	0.0001	0.57	0.0142	71.43	0.0000	0.00
Rack 60/61 Loading	D192	Loading	24	365	0.0031	Neat Renewable Jet	1.11	0.09	0.0001	0.33	0.0024	7.49	0.0002	0.68	0.0001	0.19	0.0001	0.42

Table A-7: Project Potential Load Rack Emissions Calculations

			Stack Emissions															
			Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Loading/ Unloading	Stack Isoprene lbs/hr	Stack Isoprene lbs/yr	Stack Isopropyl benzene lbs/hr	Stack Isopropyl benzene lbs/yr	Stack Methanol lbs/hr	Stack Methanol lbs/yr	Stack Naphthalene lbs/hr	Stack Naphthalene lbs/yr	Stack Toluene lbs/hr	Stack Toluene lbs/yr	Stack 1,2,4-Trimethylbenzene lbs/hr	Stack 1,2,4-Trimethylbenzene lbs/yr	Stack 2,2,4-Trimethylpentane lbs/hr	Stack 2,2,4-Trimethylpentane lbs/yr	Stack Xylenes lbs/hr	Stack Xylenes lbs/yr
Rack 19	D224	Loading	0.0000	0.00	0.0000	0.01	0.0001	0.31	0.0000	0.01	0.0016	7.45	0.0002	0.76	0.0090	42.61	0.0017	7.62
Rack 80/81	D200	Loading	0.0000	0.00	0.0000	0.01	0.0001	0.31	0.0000	0.01	0.0016	7.45	0.0002	0.76	0.0090	42.61	0.0017	7.62
Rack 20	D231	Loading	0.0000	0.00	0.0000	0.01	0.0001	0.35	0.0000	0.01	0.0017	8.28	0.0002	0.84	0.0096	47.35	0.0018	8.46
Rack 21	D233	Loading	0.0000	0.00	0.0000	0.01	0.0001	0.35	0.0000	0.01	0.0017	8.28	0.0002	0.84	0.0096	47.35	0.0018	8.46
Rack 60/61 Loading	D192	Loading	0.0003	1.01	0.0000	0.09	0.0000	0.00	0.0000	0.00	0.0002	0.52	0.0003	0.80	0.0000	0.00	0.0006	1.77

Table A-7: Project Potential Load Rack Emissions Calculations

Unit	SCAQMD Device Number	Loading/ Unloading	Description of Modification	Reloc-ated	Daily Throughput (bbl/day)	Monthly Throughput (gal/mo)	Control Device(s)	Control Efficiency (%)	Capture Efficiency (%)	Saturation Factor	Fuel		
											Commodity	Commodity Vapor Molecular Weight (lb/lbmol)	Commodity Vapor Pressure (psia)
Rack 70/71 Loading	D196	Loading	Product/tput change from asphalt to distillate; remove mist eliminator; connect to VRS	Y	8,640	5,040,000	H-907	99	100	1 [1]	Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel, Blended Jet Fuel	130	0.1
Rack 18	D219	Loading	Connect to VRS	Y	3,000	3,780,000	H-907	99	100	1 [1]	Recovered Oil	70	3
Spent Caustic Loading	D843	Loading	No change	N	900	1,134,000	H-402	99	100	1 [1]	Spent Sulfidic Caustic	130	0.01
Rack 22 Loading	D252	Loading	No change, no emissions from LPG loading with vapor return line	N	5,000	3,150,000	Vapor Return	0	100		LPG, Naphtha		
Track 1&2 Railcar Loading (relocated to Spur 3)	D253	Loading	Product change from spent naphthenic caustic to spent sulfidic caustic; relocated to Spur 3; connect to VRS	Y	900	37,800	T-1000 to H-402	99	100	1 [1]	Spent Sulfidic Caustic	130	0.01
Spur 3 Railcar Loading	D855	Loading	Change from 4 to 7 arms; gas oil loading to bio/renewable jet, diesel, spent caustic loading; connect to VRS	N	1,800	2,343,600	H-907	99.5	100	1 [1]	Bio/ Renewable Jet, Diesel, Spent Caustic	62	10.99
Track 1&2 Railcar Loading	D210	Loading	Equipment removed	---									
Rack 1	D925	Unloading	No change, unloading only	N							Renewable Fuel Feedstock		
Rack 1A	D222	Unloading	Slop, gas oil, naphtha, crude oil, kerosene, and diesel cutbacks unloading to biodiesel, CARB diesel, renewable diesel unloading	N							Biodiesel, CARB Diesel, Renewable Diesel		

Table A-7: Project Potential Load Rack Emissions Calculations

							Stack Emissions											
			Operating Time		Emission Factors		VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Loading/ Unloading	Hours per Day	Days per Year	Stack VOC EF (lbs/1,000 gal loaded)	Toxic Profile	Stack VOC lbs/day	Stack VOC tons/yr	Stack Benzene lbs/hr	Stack Benzene lbs/yr	Stack Cyclohexane lbs/hr	Stack Cyclohexane lbs/yr	Stack Ethylbenzene lbs/hr	Stack Ethylbenzene lbs/yr	Stack n-Hexane lbs/hr	Stack n-Hexane lbs/yr	Stack Hydrogen Sulfide lbs/hr	Stack Hydrogen Sulfide lbs/yr
Rack 70/71 Loading	D196	Loading	24	365	0.0031	Neat Renewable Jet	1.11	0.09	0.0001	0.33	0.0024	7.49	0.0002	0.68	0.0001	0.19	0.0001	0.42
Rack 18	D219	Loading	24	365	0.0496	Recovered Oil	6.24	1.12	0.0002	1.06	0.0002	1.26	0.0000	0.17	0.0012	8.36	0.0000	0.14
Spent Caustic Loading	D843	Loading	24	365	0.0003	Spent Caustic	0.01	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 22 Loading	D252	Loading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Loading (relocated to Spur 3)	D253	Loading	24	365	0.0003	Spent Caustic	0.01	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Loading	D855	Loading	24	365	0.0804	Gasoline (TVP 10.99)	6.08	1.13	0.0003	2.41	0.0001	0.94	0.0000	0.16	0.0028	19.93	0.0000	0.00
Track 1&2 Railcar Loading	D210	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 1	D925	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 1A	D222	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

			Stack Emissions															
			Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Loading/ Unloading	Stack Isoprene lbs/hr	Stack Isoprene lbs/yr	Stack Isopropyl benzene lbs/hr	Stack Isopropyl benzene lbs/yr	Stack Methanol lbs/hr	Stack Methanol lbs/yr	Stack Naphthalene lbs/hr	Stack Naphthalene lbs/yr	Stack Toluene lbs/hr	Stack Toluene lbs/yr	Stack 1,2,4-Trimethylbenzene lbs/hr	Stack 1,2,4-Trimethylbenzene lbs/yr	Stack 2,2,4-Trimethylpentane lbs/hr	Stack 2,2,4-Trimethylpentane lbs/yr	Stack Xylenes lbs/hr	Stack Xylenes lbs/yr
Rack 70/71 Loading	D196	Loading	0.0003	1.01	0.0000	0.09	0.0000	0.00	0.0000	0.00	0.0002	0.52	0.0003	0.80	0.0000	0.00	0.0006	1.77
Rack 18	D219	Loading	0.0000	0.09	0.0000	0.01	0.0000	0.04	0.0000	0.00	0.0002	1.10	0.0000	0.21	0.0008	5.58	0.0002	1.24
Spent Caustic Loading	D843	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 22 Loading	D252	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Loading (relocated to Spur 3)	D253	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Loading	D855	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.10	0.0000	0.00	0.0003	2.31	0.0000	0.24	0.0019	13.21	0.0004	2.36
Track 1&2 Railcar Loading	D210	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 1	D925	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 1A	D222	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

Unit	SCAQMD Device Number	Loading/ Unloading	Description of Modification	Reloc-ated	Daily Throughput (bbl/day)	Monthly Throughput (gal/mo)	Control Device(s)	Control Efficiency (%)	Capture Efficiency (%)	Saturation Factor	Fuel		
											Commodity	Commodity Vapor Molecular Weight (lb/lbmol)	Commodity Vapor Pressure (psia)
Rack 2	D220	Unloading	Slop, gas oil, naphtha, crude oil, kerosene, and diesel cutbacks unloading to gasoline, blendstocks, diesel, jet, kerosene unloading	Y							Gasoline Blendstocks, all diesels, kerosene, jet		
Rack 60/61 Unloading	New	Unloading	New equipment, unloading only	New							Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel, Commercial Jet Fuel		
Rack 70/71 Unloading	New	Unloading	New equipment, unloading only	New							Biodiesel, CARB Diesel, Renewable Diesel, Renewable Jet Fuel, Commercial Jet Fuel		
Rack 12	D189	Unloading	Asphalt unloading to Biodiesel, CARB diesel, renewable diesel unloading	Y							Biodiesel, CARB Diesel, Renewable Diesel		
Rack 13	D187	Unloading	Asphalt loading/unloading to Biodiesel, CARB diesel, renewable diesel unloading	Y							Biodiesel, CARB Diesel, Renewable Diesel		
Rack 16	D183	Unloading	Asphalt to raw feedstock unloading	N							Raw Feedstock		
Rack 17	D185	Unloading	Asphalt to raw feedstock unloading	N							Raw Feedstock		
Rack 22 Unloading	D218	Unloading	No change, unloading only	N							LPG, Naphtha		
Rack 23	D215 & D216	Unloading	No change, unloading only	Y							Gasoline Blend Components		

Table A-7: Project Potential Load Rack Emissions Calculations

							Stack Emissions											
			Operating Time		Emission Factors		VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Loading/ Unloading	Hours per Day	Days per Year	Stack VOC EF (lbs/1,000 gal loaded)	Toxic Profile	Stack VOC lbs/day	Stack VOC tons/yr	Stack Benzene lbs/hr	Stack Benzene lbs/yr	Stack Cyclohexane lbs/hr	Stack Cyclohexane lbs/yr	Stack Ethylbenzene lbs/hr	Stack Ethylbenzene lbs/yr	Stack n-Hexane lbs/hr	Stack n-Hexane lbs/yr	Stack Hydrogen Sulfide lbs/hr	Stack Hydrogen Sulfide lbs/yr
Rack 2	D220	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 60/61 Unloading	New	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 70/71 Unloading	New	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 12	D189	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 13	D187	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 16	D183	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 17	D185	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 22 Unloading	D218	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 23	D215 & D216	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

			Stack Emissions															
			Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Loading/ Unloading	Stack Isoprene lbs/hr	Stack Isoprene lbs/yr	Stack Isopropyl benzene lbs/hr	Stack Isopropyl benzene lbs/yr	Stack Methanol lbs/hr	Stack Methanol lbs/yr	Stack Naphthalene lbs/hr	Stack Naphthalene lbs/yr	Stack Toluene lbs/hr	Stack Toluene lbs/yr	Stack 1,2,4-Trimethylbenzene lbs/hr	Stack 1,2,4-Trimethylbenzene lbs/yr	Stack 2,2,4-Trimethylpentane lbs/hr	Stack 2,2,4-Trimethylpentane lbs/yr	Stack Xylenes lbs/hr	Stack Xylenes lbs/yr
Rack 2	D220	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 60/61 Unloading	New	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 70/71 Unloading	New	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 12	D189	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 13	D187	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 16	D183	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 17	D185	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 22 Unloading	D218	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 23	D215 & D216	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

Unit	SCAQMD Device Number	Loading/ Unloading	Description of Modification	Reloc-ated	Daily Throughput (bbl/day)	Monthly Throughput (gal/mo)	Control Device(s)	Control Efficiency (%)	Capture Efficiency (%)	Saturation Factor	Fuel		
											Commodity	Commodity Vapor Molecular Weight (lb/lbmol)	Commodity Vapor Pressure (psia)
Rack DMDS	D964	Unloading	No change, unloading only	N							DMDS		
New Citric Acid Unloading Rack	N/A	Unloading	New citric acid unloading rack for Pretreat	New							Citric Acid		
New Fresh Caustic Unloading Rack	N/A	Unloading	New fresh caustic unloading rack for Pretreat	New							Fresh Caustic		
Track 1&2 Railcar Unloading	D924	Unloading	Distillate to raw feedstock unloading; add 2 arms; move to Spur 3	Y							Raw Feedstock		
Track 1&2 Railcar Unloading	D965	Unloading	Renewable naphtha, iso-octane, alkylate, denatured ethanol to raw feedstock unloading; add 2 arms; move to Spur 3	Y							Raw Feedstock		
Track 6 Railcar Unloading	New	Unloading	New equipment, unloading only	New							Raw Feedstock		
Spur 3 Railcar Unloading	D926	Unloading	Change from 4 to 7 arms; renewable fuels feedstock unloading to ethanol, iso-octane, alkylate, bio/ renewable jet, diesel unloading	N							Ethanol, Iso-octane, Alkylate, Bio/ Renewable Jet, Diesel		
Spur 3 Railcar Unloading	New	Unloading	New equipment, unloading only	New							Dry Materials for Pretreat, Bleaching Clay, Silica		
Rack 3	D176	Loading	Equipment removed	---									
Rack 4	D177	Loading	Equipment removed	---									
Rack 5	D178	Loading	Equipment removed	---									
Rack 11	D179	Unloading	Equipment removed	---									
Rack 14	D230	Unloading	Equipment removed	---									
Rack 15	D181	Unloading	Equipment removed	---									

Table A-7: Project Potential Load Rack Emissions Calculations

							Stack Emissions											
			Operating Time		Emission Factors		VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Loading/ Unloading	Hours per Day	Days per Year	Stack VOC EF (lbs/1,000 gal loaded)	Toxic Profile	Stack VOC lbs/day	Stack VOC tons/yr	Stack Benzene lbs/hr	Stack Benzene lbs/yr	Stack Cyclohexane lbs/hr	Stack Cyclohexane lbs/yr	Stack Ethylbenzene lbs/hr	Stack Ethylbenzene lbs/yr	Stack n-Hexane lbs/hr	Stack n-Hexane lbs/yr	Stack Hydrogen Sulfide lbs/hr	Stack Hydrogen Sulfide lbs/yr
Rack DMDS	D964	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
New Citric Acid Unloading Rack	N/A	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
New Fresh Caustic Unloading Rack	N/A	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Unloading	D924	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Unloading	D965	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 6 Railcar Unloading	New	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Unloading	D926	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Unloading	New	Unloading	24	365	-	Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 3	D176	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 4	D177	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 5	D178	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 11	D179	Unloading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 14	D230	Unloading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 15	D181	Unloading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

			Stack Emissions															
			Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Loading/ Unloading	Stack Isoprene lbs/hr	Stack Isoprene lbs/yr	Stack Isopropyl benzene lbs/hr	Stack Isopropyl benzene lbs/yr	Stack Methanol lbs/hr	Stack Methanol lbs/yr	Stack Naphthalene lbs/hr	Stack Naphthalene lbs/yr	Stack Toluene lbs/hr	Stack Toluene lbs/yr	Stack 1,2,4-Trimethylbenzene lbs/hr	Stack 1,2,4-Trimethylbenzene lbs/yr	Stack 2,2,4-Trimethylpentane lbs/hr	Stack 2,2,4-Trimethylpentane lbs/yr	Stack Xylenes lbs/hr	Stack Xylenes lbs/yr
Rack DMDS	D964	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
New Citric Acid Unloading Rack	N/A	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
New Fresh Caustic Unloading Rack	N/A	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Unloading	D924	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Unloading	D965	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 6 Railcar Unloading	New	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Unloading	D926	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Spur 3 Railcar Unloading	New	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 3	D176	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 4	D177	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 5	D178	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 11	D179	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 14	D230	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 15	D181	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

Unit	SCAQMD Device Number	Loading/ Unloading	Description of Modification	Reloc-ated	Daily Throughput (bbl/day)	Monthly Throughput (gal/mo)	Control Device(s)	Control Efficiency (%)	Capture Efficiency (%)	Saturation Factor	Fuel		
											Commodity	Commodity Vapor Molecular Weight (lb/lbmol)	Commodity Vapor Pressure (psia)
Rack 19	D228	Loading	Equipment removed	---									
Rack 21	D234	Loading	Equipment removed	---									
Rack 26	D570	Unloading	Equipment removed	---									
Track 1&2 Railcar Loading	D206	Loading	Equipment removed	---									

Notes:

[1] AP-42 Section 5.2, value for vapor balance service.

[2] Calculated using AP-42 Section 5.2, Equation 1: EF (lbs/1,000 gal loaded) = 12.46 SPM/T x (1 - Control Efficiency/100), with T = 528 R

[3] Toxic emissions are calculated by multiplying VOC emissions by the vapor weight fractions in the toxic speciation profile for the worst-case product loaded.

[4] The load racks vented to H-907 have a capture efficiency of 100% for a blower system that produces a vacuum in the tank truck during loading operations.

[5] Anticipated truck traffic rates included in the CEQA analysis are based on the daily and monthly throughput noted above and used for the load rack emissions calculations. The load rack throughputs are somewhat higher than truck traffic because the rack throughputs are anticipated to be permitted maximums and account for potential equipment downtime.

Table A-7: Project Potential Load Rack Emissions Calculations

							Stack Emissions											
			Operating Time		Emission Factors		VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Loading/ Unloading	Hours per Day	Days per Year	Stack VOC EF (lbs/1,000 gal loaded)	Toxic Profile	Stack VOC lbs/day	Stack VOC tons/yr	Stack Benzene lbs/hr	Stack Benzene lbs/yr	Stack Cyclohexane lbs/hr	Stack Cyclohexane lbs/yr	Stack Ethylbenzene lbs/hr	Stack Ethylbenzene lbs/yr	Stack n-Hexane lbs/hr	Stack n-Hexane lbs/yr	Stack Hydrogen Sulfide lbs/hr	Stack Hydrogen Sulfide lbs/yr
Rack 19	D228	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 21	D234	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 26	D570	Unloading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Loading	D206	Loading				Zero Emissions	0.00	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-7: Project Potential Load Rack Emissions Calculations

			Stack Emissions															
			Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Loading/ Unloading	Stack Isoprene lbs/hr	Stack Isoprene lbs/yr	Stack Isopropyl benzene lbs/hr	Stack Isopropyl benzene lbs/yr	Stack Methanol lbs/hr	Stack Methanol lbs/yr	Stack Naphthalene lbs/hr	Stack Naphthalene lbs/yr	Stack Toluene lbs/hr	Stack Toluene lbs/yr	Stack 1,2,4-Trimethylbenzene lbs/hr	Stack 1,2,4-Trimethylbenzene lbs/yr	Stack 2,2,4-Trimethylpentane lbs/hr	Stack 2,2,4-Trimethylpentane lbs/yr	Stack Xylenes lbs/hr	Stack Xylenes lbs/yr
Rack 19	D228	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 21	D234	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Rack 26	D570	Unloading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Track 1&2 Railcar Loading	D206	Loading	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

					Post-Project Basis					Operating Time		Emission Factors		Emissions			
														VOC		Benzene	
Unit	SCAQMD Device Number	Description of Modification	Tank Type	Tank Capacity (bbl)	Monthly Throughput Limit (BPM)	Commodity	Commodity Vapor Pressure (psia)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year	TANKS ID	Uncontrolled Emissions from TANKS	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr
T-1012	D273	Asphalt to fresh caustic; relocated	Fixed	1,000		Fresh caustic		H907 incinerator or Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-1013	D274	Asphalt to fresh caustic; relocated	Fixed	1,000		Fresh caustic		H907 incinerator or Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-241	N/A	Fresh caustic R219 exempt tank	Fixed			Fresh caustic		None	0	24	365		0.000	0.00	0.00	0.0000	0.00
T-242	D568	Relocated only	Fixed	231	60,000	Spent Caustic		None	0	24	365	RFP NM-242 EST	135.219	0.37	0.07	0.0000	0.01
T-2002	D336	Sodium naphthenate to raw feed; convert from IFR to VFR with carbon	Fixed	2,000	5,000	Raw Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-2014	D337	Flare knockout pot; increase throughput and vapor pressure	IFR	2,000	55,000	Flare Knockout		None	0	24	365	RFP M-2014	2871.444	7.87	1.44	0.0004	3.92
T-5501	D301	Asphalt to Pretreat oil decant service	Fixed	5,500		Pretreat Oil Decant		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-10003	D302	Asphalt to raw feed; tput limit change	Fixed	10,000	418,500	Raw Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-10004	D303	Asphalt to pretreatment wastewater; tput limit change	Fixed	10,000	418,500	Pretreatment Wastewater		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-10005	D748	Naphtha/diesel to gasoline/diesel; tput limit change	IFR	10,000	100,000	Gasoline, Distillate		None	0	24	365	RFP M-10005	3600.724	9.86	1.80	0.0005	4.69
T-20001	D323	Asphalt to bleaching clay recovered oil; tput limit change	Fixed	20,000	837,000	Bleaching Clay Recovered Oil		Carbon	95	24	365	RFP M-20001	10870.367	1.49	0.27	0.0000	0.00
T-20002	D304	Asphalt to bleaching clay recovered oil; tput limit change	Fixed	20,000	837,000	Bleaching Clay Recovered Oil		Carbon	95	24	365	RFP M-20002	10870.367	1.49	0.27	0.0000	0.00
T-20005	D324	Convert from VFR to IFR; allow storage of Renewable Jet (Neat)	IFR	20,000	200,000	Renewable Jet (Neat), Distillate		None	0	24	365	RFP M-20005	439.164	1.20	0.22	0.0000	0.11
T-25001	D339	Naphtha to gasoline/diesel; tput limit change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP M-25001	4004.597	10.97	2.00	0.0007	6.17

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions															
			Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide		Isoprene		Cumene		Methyl Alcohol		Naphthalene	
Unit	SCAQMD Device Number	Description of Modification	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr
T-1012	D273	Asphalt to fresh caustic; relocated	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1013	D274	Asphalt to fresh caustic; relocated	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-241	N/A	Fresh caustic R219 exempt tank	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-242	D568	Relocated only	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2002	D336	Sodium naphthenate to raw feed; convert from IFR to VFR with carbon	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2014	D337	Flare knockout pot; increase throughput and vapor pressure	0.0002	1.51	0.0001	0.92	0.0033	29.12	0.0000	0.00	0.0000	0.00	0.0000	0.03	0.0000	0.15	0.0000	0.34
T-5501	D301	Asphalt to Pretreat oil decant service	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10003	D302	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10004	D303	Asphalt to pretreatment wastewater; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10005	D748	Naphtha/diesel to gasoline/diesel; tput limit change	0.0002	1.82	0.0001	0.97	0.0041	35.56	0.0000	0.00	0.0000	0.00	0.0000	0.04	0.0000	0.18	0.0000	0.34
T-20001	D323	Asphalt to bleaching clay recovered oil; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.04	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-20002	D304	Asphalt to bleaching clay recovered oil; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.04	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-20005	D324	Convert from VFR to IFR; allow storage of Renewable Jet (Neat)	0.0003	2.35	0.0001	1.01	0.0000	0.05	0.0000	0.08	0.0000	0.22	0.0000	0.25	0.0000	0.00	0.0000	0.19
T-25001	D339	Naphtha to gasoline/diesel; tput limit change	0.0003	2.38	0.0002	1.90	0.0050	43.72	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.23	0.0001	0.77

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions							
			Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
T-1012	D273	Asphalt to fresh caustic; relocated	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1013	D274	Asphalt to fresh caustic; relocated	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-241	N/A	Fresh caustic R219 exempt tank	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-242	D568	Relocated only	0.0000	0.01	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2002	D336	Sodium naphthenate to raw feed; convert from IFR to VFR with carbon	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2014	D337	Flare knockout pot; increase throughput and vapor pressure	0.0007	6.23	0.0006	5.61	0.0031	26.96	0.0018	15.40
T-5501	D301	Asphalt to Pretreat oil decant service	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10003	D302	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10004	D303	Asphalt to pretreatment wastewater; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-10005	D748	Naphtha/diesel to gasoline/diesel; tput limit change	0.0008	6.96	0.0006	5.66	0.0036	31.19	0.0018	16.09
T-20001	D323	Asphalt to bleaching clay recovered oil; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-20002	D304	Asphalt to bleaching clay recovered oil; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-20005	D324	Convert from VFR to IFR; allow storage of Renewable Jet (Neat)	0.0000	0.32	0.0006	5.19	0.0000	0.00	0.0003	2.97
T-25001	D339	Naphtha to gasoline/diesel; tput limit change	0.0013	11.44	0.0014	12.29	0.0053	46.09	0.0036	31.89

Table A-8: Project Potential Storage Tank Emissions Calculations

					Post-Project Basis					Operating Time		Emission Factors		Emissions			
														VOC		Benzene	
Unit	SCAQMD Device Number	Description of Modification	Tank Type	Tank Capacity (bbl)	Monthly Throughput Limit (BPM)	Commodity	Commodity Vapor Pressure (psia)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year	TANKS ID	Uncontrolled Emissions from TANKS	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr
T-25003	D341	Naphtha to gasoline/diesel; tput limit change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP M-25003	4004.597	10.97	2.00	0.0007	6.17
T-25004	D342	Naphtha to gasoline/diesel; tput limit change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP M-25004	4004.597	10.97	2.00	0.0007	6.17
T-25005	D343	Tput limit change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP M-25005	4015.119	11.00	2.01	0.0007	6.18
T-25009	D346	Kerosene to gasoline/distillate; tput limit change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP M-25009	3947.604	10.82	1.97	0.0007	6.11
T-35001	D305	Asphalt to distillate; tput limit change; convert from VFR with carbon to IFR	IFR	35,000	350,000	Renewable Jet (Neat), Distillate		None	0	24	365	RFP M-35001	603.678	1.65	0.30	0.0000	0.19
T-50001	D347	Tput limit change	IFR	50,000	500,000	Gasoline, Distillate		None	0	24	365	RFP M-50001	8153.028	22.34	4.08	0.0013	11.50
T-50002	D348	Diesel to gasoline/ distillate; tput limit change	IFR	50,000	500,000	Gasoline, Distillate		None	0	24	365	RFP M-50002	8153.028	22.34	4.08	0.0013	11.50
T-100001	D311	Asphalt to raw feed; tput limit change	Fixed	100,000	837,000	Raw Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-100002	D312	Asphalt to raw feed; tput limit change	Fixed	100,000	837,000	Raw Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-125001	D351	Crude to treated feed; add 12' to shell height; convert to VFR with carbon	Fixed	125,000	775,000	Treated Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-150001	N/A	Permit as distillate tank; install carbon	Fixed	150,000	800,000	Distillate		Carbon	95	24	365	RFP N-150001	9593.677	1.31	0.24	0.0009	8.10
T-150002	D328	Asphalt to raw feed; tput limit change	Fixed	150,000	837,000	Raw Feed		Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
T-25A	D329	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-25B	D330	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-141	D527	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-142	D528	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-201	D267	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-202	N/A	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-203	N/A	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-204	N/A	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-509	D523	Equipment removed											0.000	0.00	0.00	0.0000	0.00
T-512	D268	Equipment removed											0.000	0.00	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions													
			Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide		Isoprene		Cumene		Methyl Alcohol		Naphthalene	
Unit	SCAQMD Device Number	Description of Modification	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr
T-25003	D341	Naphtha to gasoline/diesel; tput limit change	0.0003	2.38	0.0002	1.90	0.0050	43.72	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.23	0.0001	0.77
T-25004	D342	Naphtha to gasoline/diesel; tput limit change	0.0003	2.38	0.0002	1.90	0.0050	43.72	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.23	0.0001	0.77
T-25005	D343	Tput limit change	0.0003	2.38	0.0002	1.90	0.0050	43.81	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.23	0.0001	0.77
T-25009	D346	Kerosene to gasoline/distillate; tput limit change	0.0003	2.36	0.0002	1.89	0.0049	43.21	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.22	0.0001	0.77
T-35001	D305	Asphalt to distillate; tput limit change; convert from VFR with carbon to IFR	0.0005	4.28	0.0002	1.43	0.0000	0.10	0.0000	0.18	0.0001	0.45	0.0000	0.35	0.0000	0.00	0.0000	0.25
T-50001	D347	Tput limit change	0.0005	4.44	0.0003	2.95	0.0096	84.34	0.0000	0.00	0.0000	0.00	0.0000	0.11	0.0000	0.43	0.0001	1.13
T-50002	D348	Diesel to gasoline/ distillate; tput limit change	0.0005	4.44	0.0003	2.95	0.0096	84.34	0.0000	0.00	0.0000	0.00	0.0000	0.11	0.0000	0.43	0.0001	1.13
T-100001	D311	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-100002	D312	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-125001	D351	Crude to treated feed; add 12' to shell height; convert to VFR with carbon	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-150001	N/A	Permit as distillate tank; install carbon	0.0209	183.02	0.0019	16.63	0.0005	4.58	0.0012	10.28	0.0028	24.67	0.0002	2.12	0.0000	0.00	0.0000	0.09
T-150002	D328	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-25A	D329	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-25B	D330	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-141	D527	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-142	D528	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-201	D267	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-202	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-203	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-204	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-509	D523	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-512	D268	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions							
			Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
T-25003	D341	Naphtha to gasoline/diesel; tput limit change	0.0013	11.44	0.0014	12.29	0.0053	46.09	0.0036	31.89
T-25004	D342	Naphtha to gasoline/diesel; tput limit change	0.0013	11.44	0.0014	12.29	0.0053	46.09	0.0036	31.89
T-25005	D343	Tput limit change	0.0013	11.45	0.0014	12.29	0.0053	46.15	0.0036	31.90
T-25009	D346	Kerosene to gasoline/distillate; tput limit change	0.0013	11.38	0.0014	12.29	0.0052	45.76	0.0036	31.83
T-35001	D305	Asphalt to distillate; tput limit change; convert from VFR with carbon to IFR	0.0001	0.51	0.0008	6.91	0.0000	0.00	0.0005	4.17
T-50001	D347	Tput limit change	0.0022	19.13	0.0021	18.29	0.0093	81.03	0.0056	49.21
T-50002	D348	Diesel to gasoline/ distillate; tput limit change	0.0022	19.13	0.0021	18.29	0.0093	81.03	0.0056	49.21
T-100001	D311	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-100002	D312	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-125001	D351	Crude to treated feed; add 12' to shell height; convert to VFR with carbon	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-150001	N/A	Permit as distillate tank; install carbon	0.0015	12.83	0.0022	19.63	0.0000	0.00	0.0050	43.42
T-150002	D328	Asphalt to raw feed; tput limit change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-25A	D329	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-25B	D330	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-141	D527	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-142	D528	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-201	D267	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-202	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-203	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-204	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-509	D523	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-512	D268	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

					Post-Project Basis					Operating Time			Emission Factors		Emissions			
															VOC		Benzene	
Unit	SCAQMD Device Number	Description of Modification	Tank Type	Tank Capacity (bbl)	Monthly Throughput Limit (BPM)	Commodity	Commodity Vapor Pressure (psia)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year		TANKS ID	Uncontrolled Emissions from TANKS	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr
T-513	D269	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-514	D270	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-515	D272	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-776	D271	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-777	D525	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1001	D169	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1014	D275	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1015	D276	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1019	D277	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1020	D278	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1021	D279	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1022	D280	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1023	D281	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1024	D282	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1025	D283	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1026	D284	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1027	D285	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-1028	D286	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2044	D287	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2046	D288	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2047	D289	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2048	D290	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2049	D291	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-2501	D292	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-3501	D293	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5001	D294	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5002	D295	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5003	D296	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5004	D297	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5005	D298	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5006	D299	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5007	D300	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-5010	N/A	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-50007	D326	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-80001	D327	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-80002	D352	Equipment removed												0.000	0.00	0.00	0.0000	0.00
T-125002	D354	Convert from distillate to stormwater tank; surrender permit for offsets												0.000	0.00	0.00	0.0000	0.00
D-951	N/A	No change												0.000	0.00	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions															
			Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide		Isoprene		Cumene		Methyl Alcohol		Naphthalene	
Unit	SCAQMD Device Number	Description of Modification	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr
T-513	D269	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-514	D270	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-515	D272	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-776	D271	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-777	D525	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1001	D169	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1014	D275	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1015	D276	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1019	D277	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1020	D278	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1021	D279	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1022	D280	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1023	D281	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1024	D282	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1025	D283	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1026	D284	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1027	D285	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1028	D286	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2044	D287	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2046	D288	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2047	D289	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2048	D290	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2049	D291	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2501	D292	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-3501	D293	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5001	D294	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5002	D295	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5003	D296	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5004	D297	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5005	D298	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5006	D299	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5007	D300	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5010	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-50007	D326	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-80001	D327	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-80002	D352	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-125002	D354	Convert from distillate to stormwater tank; surrender permit for offsets	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
D-951	N/A	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions							
			Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
T-513	D269	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-514	D270	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-515	D272	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-776	D271	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-777	D525	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1001	D169	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1014	D275	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1015	D276	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1019	D277	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1020	D278	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1021	D279	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1022	D280	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1023	D281	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1024	D282	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1025	D283	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1026	D284	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1027	D285	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-1028	D286	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2044	D287	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2046	D288	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2047	D289	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2048	D290	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2049	D291	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-2501	D292	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-3501	D293	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5001	D294	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5002	D295	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5003	D296	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5004	D297	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5005	D298	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5006	D299	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5007	D300	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-5010	N/A	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-50007	D326	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-80001	D327	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-80002	D352	Equipment removed	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-125002	D354	Convert from distillate to stormwater tank; surrender permit for offsets	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
D-951	N/A	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00

Table A-8: Project Potential Storage Tank Emissions Calculations

					Post-Project Basis					Operating Time		Emission Factors		Emissions			
														VOC		Benzene	
Unit	SCAQMD Device Number	Description of Modification	Tank Type	Tank Capacity (bbl)	Monthly Throughput Limit (BPM)	Commodity	Commodity Vapor Pressure (psia)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year	TANKS ID	Uncontrolled Emissions from TANKS	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr
T-518	D378	No change	Fixed	500	5,000	Distillate, Additives		None	0	24	365	RFP NM-518 EST	35.428	0.10	0.02	0.0001	0.60
T-1000	D168	No change	Fixed	1,000	75,000	Spent Caustic		H-402 Incinerator	99	24	365	RFP NM-1000 EST	198.224	0.01	0.00	0.0000	0.00
T-3001	D335	No change	IFR	2,440	74,217	Recovered oil from Wastewater System		None	0	24	365	RFP NM-3001 PTE	769.624	2.11	0.38	0.0000	0.43
T-6001	D315	No change	Fixed	6,000	None	Feed/ Solvent (Green Diesel)		None	0	24	365	RFP NM-6001 EST	255.111	0.70	0.13	0.0003	2.94
T-6002	D316	No change	Fixed	6,000	None	Feed/ Solvent (Green Diesel)		None	0	24	365	RFP NM-6002 EST	255.111	0.70	0.13	0.0003	2.94
T-10001	D263	No change	IFR	10,000	None	Wastewater		None	0	24	365	RFP NM-10001 EST	590.280	1.62	0.30	0.0000	0.00
T-10006	D318	No change	Fixed	10,000	100,000	Distillate		None	0	24	365	RFP NM-10006 EST	697.281	1.91	0.35	0.0013	11.78
T-10007	D319	No change	Fixed	10,000	100,000	Distillate		None	0	24	365	RFP NM-10007 EST	697.281	1.91	0.35	0.0013	11.78
T-10008	D320	No change	Fixed	10,000	100,000	Distillate		None	0	24	365	RFP NM-10008 EST	721.696	1.98	0.36	0.0014	12.21
T-10009	D264	No change	IFR	10,000	None	Wastewater		None	0	24	365	RFP NM-10009 EST	590.280	1.62	0.30	0.0000	0.00
T-12501	D321	No permit change, but service change from renewable jet to sour water	IFR	12,500	250,000	Sour Water		None	0	24	365	RFP NM-12501 EST	669.593	1.83	0.33	0.0001	0.45
T-12502	D322	No permit change, but service change from renewable jet to sour water	IFR	12,500	250,000	Sour Water		None	0	24	365	RFP NM-12502 EST	669.593	1.83	0.33	0.0001	0.45
T-20003	D355	No change	EFR	20,000	200,000	Renewable Jet (Neat), Distillate		None	0	24	365	RFP NM-20003 EST	450.515	1.23	0.23	0.0000	0.14
T-20004	D357	No change	EFR	20,000	200,000	Renewable Jet (Neat), Distillate		None	0	24	365	RFP NM-20004 EST	450.515	1.23	0.23	0.0000	0.14

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions															
			Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide		Isoprene		Cumene		Methyl Alcohol		Naphthalene	
Unit	SCAQMD Device Number	Description of Modification	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr
T-518	D378	No change	0.0015	13.57	0.0001	1.23	0.0000	0.34	0.0001	0.77	0.0002	1.83	0.0000	0.16	0.0000	0.00	0.0000	0.01
T-1000	D168	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-3001	D335	No change	0.0001	0.50	0.0000	0.36	0.0003	2.86	0.0000	0.03	0.0000	0.02	0.0000	0.06	0.0000	0.01	0.0000	0.15
T-6001	D315	No change	0.0018	15.66	0.0004	3.32	0.0013	11.12	0.0008	6.78	0.0000	0.00	0.0000	0.39	0.0000	0.00	0.0000	0.07
T-6002	D316	No change	0.0018	15.66	0.0004	3.32	0.0013	11.12	0.0008	6.78	0.0000	0.00	0.0000	0.39	0.0000	0.00	0.0000	0.07
T-10001	D263	No change	0.0000	0.11	0.0000	0.08	0.0001	0.62	0.0000	0.01	0.0000	0.00	0.0000	0.01	0.0000	0.00	0.0000	0.04
T-10006	D318	No change	0.0304	266.12	0.0028	24.17	0.0008	6.66	0.0017	14.95	0.0041	35.88	0.0004	3.08	0.0000	0.00	0.0000	0.13
T-10007	D319	No change	0.0304	266.12	0.0028	24.17	0.0008	6.66	0.0017	14.95	0.0041	35.88	0.0004	3.08	0.0000	0.00	0.0000	0.13
T-10008	D320	No change	0.0315	276.05	0.0029	25.00	0.0008	6.91	0.0018	15.58	0.0043	37.28	0.0004	3.18	0.0000	0.00	0.0000	0.13
T-10009	D264	No change	0.0000	0.11	0.0000	0.08	0.0001	0.62	0.0000	0.01	0.0000	0.00	0.0000	0.01	0.0000	0.00	0.0000	0.04
T-12501	D321	No permit change, but service change from renewable jet to sour water	0.0001	0.53	0.0001	0.66	0.0003	2.47	0.0000	0.01	0.0000	0.01	0.0000	0.12	0.0000	0.01	0.0000	0.31
T-12502	D322	No permit change, but service change from renewable jet to sour water	0.0001	0.53	0.0001	0.66	0.0003	2.47	0.0000	0.01	0.0000	0.01	0.0000	0.12	0.0000	0.01	0.0000	0.31
T-20003	D355	No change	0.0004	3.18	0.0001	1.08	0.0000	0.07	0.0000	0.13	0.0000	0.33	0.0000	0.26	0.0000	0.00	0.0000	0.19
T-20004	D357	No change	0.0004	3.18	0.0001	1.08	0.0000	0.07	0.0000	0.13	0.0000	0.33	0.0000	0.26	0.0000	0.00	0.0000	0.19

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions							
			Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
T-518	D378	No change	0.0001	0.95	0.0002	1.44	0.0000	0.00	0.0004	3.20
T-1000	D168	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
T-3001	D335	No change	0.0001	0.91	0.0002	1.95	0.0004	3.18	0.0003	2.90
T-6001	D315	No change	0.0008	6.97	0.0004	3.20	0.0012	10.86	0.0009	8.15
T-6002	D316	No change	0.0008	6.97	0.0004	3.20	0.0012	10.86	0.0009	8.15
T-10001	D263	No change	0.0000	0.21	0.0001	0.47	0.0001	0.72	0.0001	0.69
T-10006	D318	No change	0.0021	18.65	0.0033	28.52	0.0000	0.00	0.0072	63.11
T-10007	D319	No change	0.0021	18.65	0.0033	28.52	0.0000	0.00	0.0072	63.11
T-10008	D320	No change	0.0022	19.32	0.0034	29.45	0.0000	0.00	0.0075	65.27
T-10009	D264	No change	0.0000	0.21	0.0001	0.47	0.0001	0.72	0.0001	0.69
T-12501	D321	No permit change, but service change from renewable jet to sour water	0.0002	1.41	0.0004	3.89	0.0005	4.25	0.0006	5.42
T-12502	D322	No permit change, but service change from renewable jet to sour water	0.0002	1.41	0.0004	3.89	0.0005	4.25	0.0006	5.42
T-20003	D355	No change	0.0000	0.38	0.0006	5.20	0.0000	0.00	0.0004	3.14
T-20004	D357	No change	0.0000	0.38	0.0006	5.20	0.0000	0.00	0.0004	3.14

Table A-8: Project Potential Storage Tank Emissions Calculations

					Post-Project Basis					Operating Time		Emission Factors		Emissions			
														VOC		Benzene	
Unit	SCAQMD Device Number	Description of Modification	Tank Type	Tank Capacity (bbl)	Monthly Throughput Limit (BPM)	Commodity	Commodity Vapor Pressure (psia)	Control Device(s)	Control Efficiency (%)	Hours per Day	Days per Year	TANKS ID	Uncontrolled Emissions from TANKS	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr
T-25002	D340	No change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP NM-25002 EST	4004.597	10.97	2.00	0.0007	6.17
T-25006	D344	No change	IFR	25,000	250,000	Gasoline, Distillate		None	0	24	365	RFP NM-25006 EST	5220.733	14.30	2.61	0.0009	7.46
T-25007	D325	No change	Fixed	25,000	250,000	Distillate		None	0	24	365	RFP NM-25007 EST	1832.344	5.02	0.92	0.0035	30.99
T-25008	D345	No change	IFR	25,000	None	Wastewater		None	0	24	365	RFP NM-25008 EST	411.377	1.13	0.21	0.0000	0.00
T-50003	D306	No change	Fixed	50,000	500,000	Distillate		None	0	24	365	RFP NM-50003 EST	3685.546	10.10	1.84	0.0071	62.27
T-50004	D356	No change, but add ethanol and distillate service	EFR	50,000	500,000	Renewable Jet (Neat), Distillate, Ethanol		None	0	24	365	RFP NM-50004 EST	732.550	2.01	0.37	0.0000	0.20
T-50005	D307	No change	Fixed	50,000	300,000	Distillate		Carbon	95	24	365	RFP NM-50005 PTE	3733.111	0.51	0.09	0.0004	3.08
T-50006	D309	No change	Fixed	50,000	300,000	Distillate		Carbon	95	24	365	RFP NM-50006 PTE	3733.111	0.51	0.09	0.0004	3.08
T-50008	D966	No change	DEFR	50,000	279,762	Distillate		None	0	24	365	RFP NM-50008 PTE	390.024	1.07	0.20	0.0000	0.10
T-80003	D353	No change	Fixed	80,000	600,000	Treated Feed		H907 incinerator or Carbon	95	24	365		0.000	0.00	0.00	0.0000	0.00
Lakewood T-55001	R-M 32898	No change	EFR	50,000	500,000	Renewable Jet (Neat), Jet		None	0	24	365	RFP NM-55001 EST	1339.422	3.67	0.67	0.0002	1.62
Lakewood T-55002	R-M 32897	No change	EFR	50,000	500,000	Renewable Jet (Neat), Jet		None	0	24	365	RFP NM-55002 EST	1339.422	3.67	0.67	0.0002	1.62

Notes:

[1] Emissions are calculated following AP-42 Chapter 7.1 (June 2020 revision).

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions															
			Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide		Isoprene		Cumene		Methyl Alcohol		Naphthalene	
Unit	SCAQMD Device Number	Description of Modification	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr
T-25002	D340	No change	0.0003	2.38	0.0002	1.90	0.0050	43.72	0.0000	0.00	0.0000	0.00	0.0000	0.07	0.0000	0.23	0.0001	0.77
T-25006	D344	No change	0.0003	2.88	0.0002	1.98	0.0062	54.40	0.0000	0.00	0.0000	0.00	0.0000	0.08	0.0000	0.28	0.0001	0.77
T-25007	D325	No change	0.0799	700.19	0.0072	63.49	0.0020	17.52	0.0045	39.44	0.0108	94.49	0.0009	8.09	0.0000	0.00	0.0000	0.34
T-25008	D345	No change	0.0000	0.10	0.0000	0.06	0.0001	0.59	0.0000	0.01	0.0000	0.00	0.0000	0.01	0.0000	0.00	0.0000	0.03
T-50003	D306	No change	0.1606	1,407.03	0.0146	127.72	0.0040	35.19	0.0090	79.11	0.0217	189.74	0.0019	16.28	0.0000	0.00	0.0001	0.69
T-50004	D356	No change, but add ethanol and distillate service	0.0005	4.53	0.0002	1.72	0.0000	0.10	0.0000	0.17	0.0001	0.44	0.0000	0.43	0.0000	0.00	0.0000	0.31
T-50005	D307	No change	0.0079	69.35	0.0007	6.51	0.0002	1.73	0.0004	3.70	0.0010	9.15	0.0001	0.84	0.0000	0.00	0.0000	0.04
T-50006	D309	No change	0.0079	69.35	0.0007	6.51	0.0002	1.73	0.0004	3.70	0.0010	9.15	0.0001	0.84	0.0000	0.00	0.0000	0.04
T-50008	D966	No change	0.0003	2.19	0.0001	0.96	0.0000	0.05	0.0000	0.08	0.0000	0.20	0.0000	0.24	0.0000	0.00	0.0000	0.18
T-80003	D353	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Lakewood T-55001	R-M 32898	No change	0.0042	36.48	0.0005	4.39	0.0001	0.90	0.0002	1.93	0.0005	4.74	0.0001	0.72	0.0000	0.00	0.0000	0.26
Lakewood T-55002	R-M 32897	No change	0.0042	36.48	0.0005	4.39	0.0001	0.90	0.0002	1.93	0.0005	4.74	0.0001	0.72	0.0000	0.00	0.0000	0.26

Table A-8: Project Potential Storage Tank Emissions Calculations

			Emissions							
			Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
T-25002	D340	No change	0.0013	11.44	0.0014	12.29	0.0053	46.09	0.0036	31.89
T-25006	D344	No change	0.0014	12.67	0.0014	12.42	0.0061	53.17	0.0038	33.15
T-25007	D325	No change	0.0056	49.04	0.0085	74.85	0.0000	0.00	0.0189	165.77
T-25008	D345	No change	0.0000	0.17	0.0000	0.33	0.0001	0.61	0.0001	0.50
T-50003	D306	No change	0.0113	98.60	0.0172	150.71	0.0000	0.00	0.0381	333.52
T-50004	D356	No change, but add ethanol and distillate service	0.0001	0.58	0.0010	8.59	0.0000	0.00	0.0006	5.05
T-50005	D307	No change	0.0006	4.94	0.0009	7.85	0.0000	0.00	0.0019	17.02
T-50006	D309	No change	0.0006	4.94	0.0009	7.85	0.0000	0.00	0.0019	17.02
T-50008	D966	No change	0.0000	0.30	0.0006	4.97	0.0000	0.00	0.0003	2.84
T-80003	D353	No change	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
Lakewood T-55001	R-M 32898	No change	0.0003	2.78	0.0012	10.36	0.0000	0.00	0.0014	11.90
Lakewood T-55002	R-M 32897	No change	0.0003	2.78	0.0012	10.36	0.0000	0.00	0.0014	11.90

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Equipment removed				
Process/System				P01S01					P01S02				
Existing Process/System Descriptor				Crude Atmospheric Distillation Unit No. 1					Crude Atmospheric Distillation Unit No. 2				
Description of Modification				Equipment removed or out of service					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	62		62	0	0.00	54		54	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	199		199	0	0.00	38		38	0	0.00
Program)	Light Liquid	300	3.5E-04	969		969	0	0.00	418		418	0	0.00
	Heavy Liquid	100	1.6E-04	720		720	0	0.00	543		543	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	36		36	0	0.00	16		16	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	24		24	0	0.00	17		17	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	2		2	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	1,223		1223	0	0.00	487		487	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	1,064		1064	0	0.00	675		675	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	6,338		6338	0	0.00	2,818		2818	0	0.00
	Heavy Liquid	100	1.0E-04	1,125		1125	0	0.00	1,391		1391	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	13		13	0	0.00	6		6	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	26		26	0	0.00	37		37	0	0.00
Other	GV/Light Liquid	300	7.5E-04	134		134	0	0.00	41		41	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	21		21	0	0.00	21		21	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%					0%
Unit								Equipment removed					Equipment removed
Process/System								P01S01					P01S02
Existing Process/System Descriptor								Crude Atmospheric Distillation Unit No. 1					Crude Atmospheric Distillation Unit No. 2
Description of Modification								Equipment removed or out of service					Equipment removed or out of service
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Notes:

[1] Light liquid and gas/liquid streams: Liquid or gas/liquid stream with a vapor pressure greater than that of kerosene (>0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.

[2] Heavy liquid streams: Streams with a vapor pressure equal to or less than that of kerosene (≤0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.

[3] Toxic emissions are calculated by multiplying VOC emissions by the liquid weight fractions in the applicable toxic speciation profile.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Equipment removed				
Process/System				P01S03					P01S04				
Existing Process/System Descriptor				Crude Distillation Heaters					Light Naphtha Fractionation Unit				
Description of Modification				Equipment removed or out of service					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	40		40	0	0.00	61		61	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	225		225	0	0.00	27		27	0	0.00
Program)	Light Liquid	300	3.5E-04	91		91	0	0.00	203		203	0	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	1		1	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	2		2	0	0.00	5		5	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	257		257	0	0.00	271		271	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	1,585		1585	0	0.00	771		771	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	6		6	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0		0	0	0.00	2		2	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	2		2	0	0.00	8		8	0	0.00
Other	GV/Light Liquid	300	7.5E-04	35		35	0	0.00	26		26	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%					
Unit				Equipment removed					Equipment removed					
Process/System				P01S03					P01S04					
Existing Process/System Descriptor				Crude Distillation Heaters					Light Naphtha Fractionation Unit					
Description of Modification				Equipment removed or out of service					Equipment removed or out of service					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Removed					Removed	
	Ethylbenzene lbs/yr							0.00						0.00
Hexane (n)	n-Hexane lbs/hr							0.00						0.00
	n-Hexane lbs/yr							0.00						0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00						0.00
	Hydrogen Chloride lbs/yr							0.00						0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00						0.00
	Hydrogen Sulfide lbs/yr							0.00						0.00
Isoprene	Isoprene lbs/hr							0.00						0.00
	Isoprene lbs/yr							0.00						0.00
Cumene	Isopropyl benzene lbs/hr							0.00						0.00
	Isopropyl benzene lbs/yr							0.00						0.00
Methyl Alcohol	Methanol lbs/hr							0.00						0.00
	Methanol lbs/yr							0.00						0.00
Naphthalene	Naphthalene lbs/hr							0.00						0.00
	Naphthalene lbs/yr							0.00						0.00
Propylene	Propylene lbs/hr							0.00						0.00
	Propylene lbs/yr							0.00						0.00
Toluene	Toluene lbs/hr							0.00						0.00
	Toluene lbs/yr							0.00						0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00						0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00						0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00						0.00
	2,2,4-Trimethylpentane lbs/yr							0.00						0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00						0.00
	Xylenes lbs/yr							0.00						0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit								Equipment removed				Equipment removed
Process/System								P01S05				P01S06
Existing Process/System Descriptor								Crude Vacuum Distillation Unit No. 1				Crude Vacuum Distillation Unit No. 2
Description of Modification								Equipment removed or out of service				Equipment removed or out of service
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
Component Counts:													
Valves	Bellows Sealed Valves	0	0	1		1	0	0.00	1		1	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	3		3	0	0.00	1		1	0	0.00
Program)	Light Liquid	300	3.5E-04	27		27	0	0.00	44		44	0	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	0		0	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	3		3	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	39		39	0	0.00	44		44	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	131		131	0	0.00	131		131	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	0		0	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	1		1	0	0.00	0		0	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	7		7	0	0.00
Other	GV/Light Liquid	300	7.5E-04	3		3	0	0.00	6		6	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			0%				0%	
Unit				Equipment removed				Equipment removed				
Process/System				P01S05				P01S06				
Existing Process/System Descriptor				Crude Vacuum Distillation Unit No. 1				Crude Vacuum Distillation Unit No. 2				
Description of Modification				Equipment removed or out of service				Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			0%				0%
Unit				Equipment removed				Equipment removed			
Process/System				P01S09				P02S01			
Existing Process/System Descriptor				Crude Unit Feed Desalter				Naphtha Hydrodesulfurization Unit (HDS #1)			
Description of Modification				Equipment removed or out of service				Equipment removed or out of service			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	42		42	0	0.00	191		191	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0		0	0	0.00	43		43	0	0.00
Program)	Light Liquid	300	3.5E-04	182		182	0	0.00	328		328	0	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	8		8	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1		1	0	0.00	12		12	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	1		1	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	183		183	0	0.00	576		576	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	637		637	0	0.00	1,851		1851	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	40		40	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	2		2	0	0.00	7		7	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	3		3	0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	25		25	0	0.00	50		50	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit								Equipment removed				Equipment removed
Process/System								P01S09				P02S01
Existing Process/System Descriptor								Crude Unit Feed Desalter				Naphtha Hydrodesulfurization Unit (HDS #1)
Description of Modification								Equipment removed or out of service				Equipment removed or out of service
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					0%				
Unit				Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)					Equipment removed				
Process/System				P2S2					P02S04				
Existing Process/System Descriptor				Hydrotreating Heaters					Gas Oil Hydrodesulfurization Unit (HDS #3)				
Description of Modification				No change					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Removed
Component Counts:													
Valves	Bellows Sealed Valves	0	0	175			219	0.00	36		36	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	137			172	0.06	204		204	0	0.00
Program)	Light Liquid	300	3.5E-04	82			103	0.04	193		193	0	0.00
	Heavy Liquid	100	1.6E-04	0			0	0.00	284		284	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	2		2	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	6		6	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	1		1	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	317			397	0.22	495		495	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	202		202	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	1,468			1835	0.41	3,240		3240	0	0.00
	Heavy Liquid	100	1.0E-04	0			0	0.00	1,042		1042	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0			0	0.00	13		13	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	1		1	0	0.00
Other	GV/Light Liquid	300	7.5E-04	23			29	0.02	21		21	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	12		12	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.752					0.000
Emissions:													
VOC	VOC lbs/day							18.04					0.00
	VOC tons/yr							3.29					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							1.32					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	25%				0%				
Unit				Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)					Equipment removed				
Process/System				P2S2					P02S04				
Existing Process/System Descriptor				Hydrotreating Heaters					Gas Oil Hydrodesulfurization Unit (HDS #3)				
Description of Modification				No change					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							35.55					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							1.32					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							2.63					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					25%				
Unit				Equipment removed					Naphtha Stabilization				
Process/System				P02S06					P02S07				
Existing Process/System Descriptor				Naphtha Splitter					Stabilization Unit				
Description of Modification				Equipment removed or out of service					Add additional components				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed							Propane Recovery Unit
Component Counts:													
Valves	Bellows Sealed Valves	0	0	215		215	0	0.00	165	36		252	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	2		2	0	0.00	3	38		52	0.02
Program)	Light Liquid	300	3.5E-04	78		78	0	0.00	87	72		199	0.07
	Heavy Liquid	100	1.6E-04				0	0.00	0	8		10	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	4		4	0	0.00	2	0		2	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	2		2	0	0.00	0	1		1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				0	0.00	0	0		0	0.00
Compressors	Gas / Vapor	500	1.0E-03				0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	318		318	0	0.00	237	162		499	0.28
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				0	0.00	0	4		5	0.00
Connectors	GV/Light Liquid	300	2.2E-04	956		956	0	0.00	695	284		1224	0.27
	Heavy Liquid	100	1.0E-04				0	0.00	0	7		9	0.00
Pressure Relief Valves	Gas / Vapor	0	0	3		3	0	0.00	2	4		8	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	10		10	0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	17		17	0	0.00	12	3		19	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0	1		2	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.672
Emissions:													
VOC	VOC lbs/day							0.00					16.14
	VOC tons/yr							0.00					2.95
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				25%
Unit						Equipment removed				Naphtha Stabilization		
Process/System						P02S06				P02S07		
Existing Process/System Descriptor						Naphtha Splitter				Stabilization Unit		
Description of Modification						Equipment removed or out of service				Add additional components		
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Propane Recovery Unit
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.02
	n-Hexane lbs/yr							0.00					176.71
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					10.60
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					0%				
Unit				Propane Recovery Unit					Equipment removed				
Process/System				New					P03S01				
Existing Process/System Descriptor				New					Catalytic Reforming Unit				
Description of Modification				New Unit					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Propane Recovery Unit					Removed
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	329		412	0.00	39		39	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	348		435	0.15	274		274	0	0.00
Program)	Light Liquid	300	3.5E-04	0	651		814	0.29	511		511	0	0.00
	Heavy Liquid	100	1.6E-04	0	80		100	0.02	0		0	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	7		7	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	16		16	0.03	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	4		4	0.01	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	2		2	0.00	2		2	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	1467		1834	1.02	817		817	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	36		45	0.01	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	2564		3205	0.72	2,873		2873	0	0.00
	Heavy Liquid	100	1.0E-04	0	69		87	0.01	0		0	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	42		53	0.00	8		8	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	9		12	0.01	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	35		44	0.03	48		48	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	14		18	0.01	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								2.311					0.000
Emissions:													
VOC	VOC lbs/day							55.46					0.00
	VOC tons/yr							10.12					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			25%				0%
Unit				Propane Recovery Unit				Equipment removed			
Process/System				New				P03S01			
Existing Process/System Descriptor				New				Catalytic Reforming Unit			
Description of Modification				New Unit				Equipment removed			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Propane Recovery Unit					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.07					0.00
	n-Hexane lbs/yr							607.30					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							36.44					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Equipment removed				
Process/System				P03S02					P04S01, P04S02, P04S03, P04S04				
Existing Process/System Descriptor				Catalytic Reforming Unit Heaters					Asphalt Oxidizing Unit Nos. 1-4				
Description of Modification				Equipment removed					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	77		77	0	0.00	0		0	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	130		130	0	0.00	0		0	0	0.00
Program)	Light Liquid	300	3.5E-04	0		0	0	0.00	170		170	0	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	683		683	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	5		5	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	63		63	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	73		73	0	0.00	241		241	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	929		929	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	1,768		1768	0	0.00	583		583	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	846		846	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0		0	0	0.00	8		8	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	17		17	0	0.00	28		28	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	8		8	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			0%				0%	
Unit					Equipment removed				Equipment removed			
Process/System					P03S02				P04S01, P04S02, P04S03, P04S04			
Existing Process/System Descriptor					Catalytic Reforming Unit Heaters				Asphalt Oxidizing Unit Nos. 1-4			
Description of Modification					Equipment removed				Equipment removed			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%				
Unit				Equipment removed					Equipment removed				
Process/System				P04S06					P04S12				
Existing Process/System Descriptor				Asphalt Pit					Asphalt Production Heaters				
Description of Modification				Modify for tallow recovery; Move to pretreat area; no VOC					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service				Pretreat					Removed				
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0		0	0	0.00	13		13	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0		0	0	0.00	50		50	0	0.00
Program)	Light Liquid	300	3.5E-04	0		0	0	0.00	0		0	0	0.00
	Heavy Liquid	100	1.6E-04	13		13	0	0.00	163		163	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0		0	0	0.00	44		44	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	21		21	0	0.00	215		215	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0		0	0	0.00	339		339	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	194		194	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0		0	0	0.00	0		0	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	0		0	0	0.00	2		2	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%					0%
Unit								Equipment removed					Equipment removed
Process/System								P04S06					P04S12
Existing Process/System Descriptor								Asphalt Pit					Asphalt Production Heaters
Description of Modification								Modify for tallow recovery; Move to pretreat area; no VOC					Equipment removed
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Pretreat					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				In-Line Gasoline Blending					Unit A Amine/Fuel Gas Treating Unit				
Process/System				P05S01					P06S01				
Existing Process/System Descriptor				In-Line Gasoline Blending					Amine/Fuel Gas Treating Unit				
Description of Modification				Clean up permit equipment counts					Modify to use as Unit A Amine/Fuel Gas Treating Unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Gasoline (TVP 10.99)					Amine/Amine Regen
Component Counts:													
Valves	Bellows Sealed Valves	0	0	139			174	0.00	6		3	4	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	26		18	10	0.00
Program)	Light Liquid	300	3.5E-04	242			303	0.11	74		16	73	0.03
	Heavy Liquid	100	1.6E-04	14			18	0.00	93		24	87	0.01
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	12			12	0.06	1		0	1	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	7		2	5	0.01
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	445			557	0.31	102		44	73	0.04
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	34			43	0.01	95		33	78	0.02
Connectors	GV/Light Liquid	300	2.2E-04	1,103			1379	0.31	230		93	172	0.04
	Heavy Liquid	100	1.0E-04	24			30	0.00	249		29	275	0.03
Pressure Relief Valves	Gas / Vapor	0	0	23			29	0.00	6		0	8	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	10			13	0.01	7		3	5	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	4		1	4	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.817					0.190
Emissions:													
VOC	VOC lbs/day							19.61					4.56
	VOC tons/yr							3.58					0.83
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							41.81					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							15.82					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	25%				25%			
Unit				In-Line Gasoline Blending					Unit A Amine/Fuel Gas Treating Unit			
Process/System				P05S01					P06S01			
Existing Process/System Descriptor				In-Line Gasoline Blending					Amine/Fuel Gas Treating Unit			
Description of Modification				Clean up permit equipment counts					Modify to use as Unit A Amine/Fuel Gas Treating Unit			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Gasoline (TVP 10.99)					Amine/Amine Regen
	Ethylbenzene lbs/yr							29.28					0.00
Hexane (n)	n-Hexane lbs/hr							0.02					0.02
	n-Hexane lbs/yr							214.76					148.30
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.01
	Hydrogen Sulfide lbs/yr							0.00					47.27
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							1.24					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							1.30					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							13.60					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.02					0.00
	Toluene lbs/yr							138.16					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.02					0.00
	1,2,4-Trimethylbenzene lbs/yr							211.90					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.05					0.00
	2,2,4-Trimethylpentane lbs/yr							446.71					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.06					0.00
	Xylenes lbs/yr							500.40					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Units A & B Sour Water Stripper Unit					Sour Water Stripper Plus Unit				
Process/System				P06S02					New				
Existing Process/System Descriptor				Sour Water Stripper Unit					New				
Description of Modification				Modify to use as Unit A & B Sour Water Stripper Unit					New Unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Baseline Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Baseline Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Sour Water Stripper					Sour Water Stripper Plus
Component Counts:													
Valves	Bellows Sealed Valves	0	0	4			5	0.00	0	195		244	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	14			18	0.01	0	72		90	0.03
Program)	Light Liquid	300	3.5E-04	81			102	0.04	0	245		307	0.11
	Heavy Liquid	100	1.6E-04	0	24		30	0.00	0	264		330	0.05
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	0			0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0	17		17	0.03
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	1		1	0.00	0	0		0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	49			62	0.03	0	207		259	0.14
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	13		17	0.00	0	5		7	0.00
Connectors	GV/Light Liquid	300	2.2E-04	250			313	0.07	0	1302		1628	0.37
	Heavy Liquid	100	1.0E-04	0	48		60	0.01	0	116		145	0.01
Pressure Relief Valves	Gas / Vapor	0	0	1			2	0.00	0	0		0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	1		2	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	9			12	0.01	0	15		19	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0	21		27	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.175					0.775
Emissions:													
VOC	VOC lbs/day							4.21					18.60
	VOC tons/yr							0.77					3.40
Ammonia	Ammonia lbs/hr							0.01					0.00
	Ammonia lbs/yr							110.38					23.77
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

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Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			25%				25%
Unit				Units A & B Sour Water Stripper Unit					Sour Water Stripper Plus Unit		
Process/System				P06S02					New		
Existing Process/System Descriptor				Sour Water Stripper Unit					New		
Description of Modification				Modify to use as Unit A & B Sour Water Stripper Unit					New Unit		
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Baseline Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Baseline Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Sour Water Stripper					Sour Water Stripper Plus
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.68
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.41
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.01					0.00
	Hydrogen Sulfide lbs/yr							80.90					3.73
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Equipment removed				
Process/System				P06S03					P06S04				
Existing Process/System Descriptor				Jet Fuel Treating Unit					Light Naphtha Merox Treater				
Description of Modification				Equipment removed					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0		0	0	0.00	50		50	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0		0	0	0.00	67		67	0	0.00
Program)	Light Liquid	300	3.5E-04	9		9	0	0.00	22		22	0	0.00
	Heavy Liquid	100	1.6E-04	176		176	0	0.00	104		104	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1		1	0	0.00	0		0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	6		6	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0		0	0	0.00	134		134	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	251		251	0	0.00	202		202	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	50		50	0	0.00	409		409	0	0.00
	Heavy Liquid	100	1.0E-04	242		242	0	0.00	178		178	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	2		2	0	0.00	1		1	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	10		10	0	0.00	13		13	0	0.00
Other	GV/Light Liquid	300	7.5E-04	2		2	0	0.00	3		3	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit								Equipment removed				Equipment removed
Process/System								P06S03				P06S04
Existing Process/System Descriptor								Jet Fuel Treating Unit				Light Naphtha Merox Treater
Description of Modification								Equipment removed				Equipment removed
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				25%					
Unit				Equipment removed				Caustic Storage and Scrubbing					
Process/System				P06S05				P6S6					
Existing Process/System Descriptor				Heavy Naphtha Merox Treater				Caustic Storage and Scrubbing					
Description of Modification				Equipment removed									
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed							Amine/Amine Regen
Component Counts:													
Valves	Bellows Sealed Valves	0	0	20		20	0	0.00	0	9		12	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	7		7	0	0.00	0	0		0	0.00
Program)	Light Liquid	300	3.5E-04	20		20	0	0.00	0	10		13	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	145	22		209	0.03
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0	1		1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	4	0		4	0.01
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	45		45	0	0.00	0	12		15	0.01
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	121	0		152	0.04
Connectors	GV/Light Liquid	300	2.2E-04	72		72	0	0.00	0	56		70	0.02
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	376	0		470	0.05
Pressure Relief Valves	Gas / Vapor	0	0	0		0	0	0.00	1	0		2	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	1		1	0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	3		3	0	0.00	0	0		0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	5	1		8	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.160
Emissions:													
VOC	VOC lbs/day							0.00					3.84
	VOC tons/yr							0.00					0.70
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				25%
Unit						Equipment removed				Caustic Storage and Scrubbing		
Process/System						P06S05				P6S6		
Existing Process/System Descriptor						Heavy Naphtha Merox Treater				Caustic Storage and Scrubbing		
Description of Modification						Equipment removed						
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Amine/Amine Regen
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.01
	n-Hexane lbs/yr							0.00					124.82
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					39.78
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%				25%
Unit				Unit A Amine Regeneration Unit					Unit B Amine			
Process/System				P06S07					New			
Existing Process/System Descriptor				Amine Regeneration Unit					New			
Description of Modification				Modify to use as Unit A Amine Regeneration Unit					New Unit B Amine/Fuel Gas Treating Unit & Amine Regeneration Unit			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Amine/Amine Regen					Amine/Amine Regen
Component Counts:													
Valves	Bellows Sealed Valves	0	0	23			29	0.00	0	0		0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	48			60	0.02	0	172		215	0.08
Program)	Light Liquid	300	3.5E-04	6			8	0.00	0	0		0	0.00
	Heavy Liquid	100	1.6E-04	265			332	0.05	0	550		688	0.11
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1			1	0.01	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	3			3	0.01	0	8		8	0.02
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0	2		2	0.00
Flanges	GV/Light Liquid	300	5.6E-04	48			60	0.03	0	141		177	0.10
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	228			285	0.07	0	608		760	0.19
Connectors	GV/Light Liquid	300	2.2E-04	220			275	0.06	0	395		494	0.11
	Heavy Liquid	100	1.0E-04	995			1244	0.12	0	1224		1530	0.15
Pressure Relief Valves	Gas / Vapor	0	0	1			2	0.00	0	11		14	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0	11		14	0.01
Other	GV/Light Liquid	300	7.5E-04	5			7	0.01	0	15		19	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	11			14	0.01	0	26		33	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.390					0.799
Emissions:													
VOC	VOC lbs/day							9.36					19.18
	VOC tons/yr							1.71					3.50
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit							Unit A Amine Regeneration Unit					Unit B Amine	
Process/System							P06S07					New	
Existing Process/System Descriptor							Amine Regeneration Unit					New	
Description of Modification							Modify to use as Unit A Amine Regeneration Unit					New Unit B Amine/Fuel Gas Treating Unit & Amine Regeneration Unit	
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Amine/Amine Regen					Amine/Amine Regen
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.03					0.07
	n-Hexane lbs/yr							304.30					623.63
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.01					0.02
	Hydrogen Sulfide lbs/yr							96.99					198.78
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%				25%					
Unit				Unit B H2S Recovery Unit					Unit A SOx Control				
Process/System				New					P07S01, P07S02, P0703				
Existing Process/System Descriptor				New					Sulfur Recovery Unit, Tail Gas (SCOT) Unit, Reduction Control, Tail Gas Incinerator				
Description of Modification				New Unit B H2S Recovery Unit					Modify to use as Unit A SOx Control				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								H2S Recovery					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	0		0	0.00	29	158		234	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0		0	0.00	45	63		135	0.05
Program)	Light Liquid	300	3.5E-04	0	0		0	0.00	7	55		78	0.03
	Heavy Liquid	100	1.6E-04	0	965		1207	0.19	0	60		75	0.01
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	0	3		3	0.02
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0	4		4	0.01
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	12		12	0.02	0	7		7	0.01
Compressors	Gas / Vapor	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	0		0	0.00	33	249		353	0.20
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	946		1183	0.30	0	70		88	0.02
Connectors	GV/Light Liquid	300	2.2E-04	0	0		0	0.00	230	584		1018	0.23
	Heavy Liquid	100	1.0E-04	0	2220		2775	0.28	0	306		383	0.04
Pressure Relief Valves	Gas / Vapor	0	0	0	0		0	0.00	0	3		4	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	12		15	0.02	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	4		5	0.00	7	39		58	0.04
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	36		45	0.02	0	9		12	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.828					0.658
Emissions:													
VOC	VOC lbs/day							19.87					15.79
	VOC tons/yr							3.63					2.88
Ammonia	Ammonia lbs/hr							0.06					0.00
	Ammonia lbs/yr							521.52					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					1.15
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	25%				25%				
Unit				Unit B H2S Recovery Unit					Unit A SOx Control				
Process/System				New					P07S01, P07S02, P0703				
Existing Process/System Descriptor				New					Sulfur Recovery Unit, Tail Gas (SCOT) Unit, Reduction Control, Tail Gas Incinerator				
Description of Modification				New Unit B H2S Recovery Unit					Modify to use as Unit A SOx Control				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								H2S Recovery					Renewable Fuel Gas
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					31.13
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.04					0.00
	Hydrogen Sulfide lbs/yr							382.26					1.15
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					2.31

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Tank Truck Unloading Rack No. 1 (1/1A)					Tank Truck Unloading Rack No. 2				
Process/System				P08S01					P08S02				
Existing Process/System Descriptor				Naphtha/Kerosene Unloading Rack No. 1					Naphtha/Kerosene Unloading Rack No. 2				
Description of Modification				All components to be in HL service					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Distillate fuel oil no. 2					Gasoline (TVP 10.99)
Component Counts:													
Valves	Bellows Sealed Valves	0	0	1			2	0.00	1			2	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04	6		6	0	0.00	17			22	0.01
	Heavy Liquid	100	1.6E-04	26	6		40	0.01	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	1			1	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	2			2	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	14		14	0	0.00	22			28	0.02
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	32	14		58	0.01	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	9		9	0	0.00	60			75	0.02
	Heavy Liquid	100	1.0E-04	35	9		55	0.01	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0			0	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	0			0	0.00	0			0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.031					0.046
Emissions:													
VOC	VOC lbs/day							0.73					1.09
	VOC tons/yr							0.13					0.20
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.01					2.33
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.06					0.88
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:			25%					25%					
Unit			Tank Truck Unloading Rack No. 1 (1/1A)					Tank Truck Unloading Rack No. 2					
Process/System			P08S01					P08S02					
Existing Process/System Descriptor			Naphtha/Kerosene Unloading Rack No. 1					Naphtha/Kerosene Unloading Rack No. 2					
Description of Modification			All components to be in HL service					No change					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Distillate fuel oil no. 2					Gasoline (TVP 10.99)
	Ethylbenzene lbs/yr							0.15					1.63
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.03					11.97
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.04					0.07
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.07
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.12					0.76
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.10					7.70
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.70					11.81
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.09					24.89
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.42					27.88

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Equipment removed				
Process/System				P08S03					P08S04				
Existing Process/System Descriptor				Emulsified Asphalt Tank Truck Loading Rack No. 3					Emulsified Asphalt Tank Truck Loading Rack No. 4				
Description of Modification				Equipment removed					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	0	0		0.00	0	0	0		0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0	0		0.00	0	0	0		0.00
Program)	Light Liquid	300	3.5E-04	0	0	0		0.00	0	0	0		0.00
	Heavy Liquid	100	1.6E-04	24	24	0		0.00	5	5	0		0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0	0		0.00	0	0	0		0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0	0		0.00	0	0	0		0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0	0		0.00	0	0	0		0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0	0		0.00	0	0	0		0.00
Compressors	Gas / Vapor	500	1.0E-03	0	0	0		0.00	0	0	0		0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	0	0		0.00	0	0	0		0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	36	36	0		0.00	10	10	0		0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	0	0		0.00	0	0	0		0.00
	Heavy Liquid	100	1.0E-04	42	42	0		0.00	17	17	0		0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	0	0		0.00	0	0	0		0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0	0		0.00	0	0	0		0.00
Other	GV/Light Liquid	300	7.5E-04	0	0	0		0.00	0	0	0		0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0	0		0.00	0	0	0		0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%				
Unit				Equipment removed					Equipment removed				
Process/System				P08S03					P08S04				
Existing Process/System Descriptor				Emulsified Asphalt Tank Truck Loading Rack No. 3					Emulsified Asphalt Tank Truck Loading Rack No. 4				
Description of Modification				Equipment removed					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				25%
Unit				Equipment removed				Tank Truck Loading Rack No. 6 (60/61)				
Process/System				P08S05				P08S06				
Existing Process/System Descriptor				Emulsified Asphalt Tank Truck Loading Rack No. 5				Asphalt Tank Truck Loading Rack No. 6 (60/61)				
Description of Modification				Equipment removed				Asphalt to jet loading; install 2 new unloading arms				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed						Jet Kerosene	
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	0	0	0	0.00	0	9		12	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0	0	0	0.00	0	0		0	0.00
Program)	Light Liquid	300	3.5E-04	0	0	0	0	0.00	10	0	10	0	0.00
	Heavy Liquid	100	1.6E-04	8	8	0	0	0.00	61	50		139	0.02
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0	0	0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0	0	0	0.00	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0	0	0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0	0	0	0.00	0	1		1	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	0	0	0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	0	0	0	0.00	9	0	9	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	18	18	0	0	0.00	121	27		185	0.05
Connectors	GV/Light Liquid	300	2.2E-04	0	0	0	0	0.00	17	0	17	0	0.00
	Heavy Liquid	100	1.0E-04	30	30	0	0	0.00	71	312		479	0.05
Pressure Relief Valves	Gas / Vapor	0	0	1	1	0	0	0.00	0	4		5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0	0	0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	0	0	0	0.00	1	0	1	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0	0	0	0.00	2	17		24	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.128
Emissions:													
VOC	VOC lbs/day							0.00					3.07
	VOC tons/yr							0.00					0.56
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.11
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					2.45
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					25%				
Unit				Equipment removed					Tank Truck Loading Rack No. 6 (60/61)				
Process/System				P08S05					P08S06				
Existing Process/System Descriptor				Emulsified Asphalt Tank Truck Loading Rack No. 5					Asphalt Tank Truck Loading Rack No. 6 (60/61)				
Description of Modification				Equipment removed					Asphalt to jet loading; install 2 new unloading arms				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Jet Kerosene
	Ethylbenzene lbs/yr							0.00					2.44
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.04
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.06
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.66
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.53
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.61
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					13.99
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					7.30

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%					
Unit				Tank Truck Loading Rack No. 7 (70/71)					Tank Truck Loading Rack No. 8 (80/81)					
Process/System				P08S07					P08S08					
Existing Process/System Descriptor				Asphalt Two-Position Tank Truck Loading Rack No. 7 (70/71)					Asphalt Tank Truck Loading Rack No. 8 (80/81)					
Description of Modification				Asphalt to jet loading; install 2 new unloading arms					Asphalt to diesel loading					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Jet Kerosene					Jet Kerosene
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	9		12	0.00	0	7		9	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0		0	0.00	0	0		0	0.00
Program)	Light Liquid	300	3.5E-04	9	0	9	0	0.00	25	0	25	0	0.00
	Heavy Liquid	100	1.6E-04	71	40		139	0.02	20	51		89	0.01
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	1	0	1	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	1		1	0.00	1	0		1	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	11	0	11	0	0.00	16	0	16	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	162	-14		185	0.05	33	57		113	0.03
Connectors	GV/Light Liquid	300	2.2E-04	31	0	31	0	0.00	81	0	81	0	0.00
	Heavy Liquid	100	1.0E-04	198	185		479	0.05	29	299		410	0.04
Pressure Relief Valves	Gas / Vapor	0	0	0	4		5	0.00	0	4		5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	1	0	1	0	0.00	0	0		0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	19		24	0.01	0	19		24	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.128					0.095
Emissions:													
VOC	VOC lbs/day							3.07					2.27
	VOC tons/yr							0.56					0.41
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.11					0.08
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							2.45					1.82
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Tank Truck Loading Rack No. 7 (70/71)					Tank Truck Loading Rack No. 8 (80/81)				
Process/System				P08S07					P08S08				
Existing Process/System Descriptor				Asphalt Two-Position Tank Truck Loading Rack No. 7 (70/71)					Asphalt Tank Truck Loading Rack No. 8 (80/81)				
Description of Modification				Asphalt to jet loading; install 2 new unloading arms					Asphalt to diesel loading				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Jet Kerosene					Jet Kerosene
	Ethylbenzene lbs/yr							2.44					1.81
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.04					0.03
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.06					0.04
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.66					0.49
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.53					0.39
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.61					0.45
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							13.99					10.36
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							7.30					5.40

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				25%
Unit				Tank Truck Unloading Rack No. 11					Tank Truck Unloading Rack No. 12/13			
Process/System				P08S09					P08S10 & P08S11			
Existing Process/System Descriptor				Asphalt Tank Truck Load/Unloading Rack No. 11					Asphalt Truck Unloading Rack No. 12 & Asphalt Truck Load/Unloading Rack No. 13			
Description of Modification				Converted to caustic unloading rack; no VOC					Racks 12 and 13 are being combined into a single rack			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Fresh Caustic					Distillate fuel oil no. 2
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0		0	0	0.00	0	7		9	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0		0	0	0.00	0	0		0	0.00
Program)	Light Liquid	300	3.5E-04	14		14	0	0.00	2	0	2	0	0.00
	Heavy Liquid	100	1.6E-04	57		57	0	0.00	40	31		89	0.01
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	1	0	1	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	2		2	0	0.00	0	2		2	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	26		26	0	0.00	4	0	4	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	75		75	0	0.00	78	12		113	0.03
Connectors	GV/Light Liquid	300	2.2E-04	23		23	0	0.00	7	0	7	0	0.00
	Heavy Liquid	100	1.0E-04	43		43	0	0.00	8	320		410	0.04
Pressure Relief Valves	Gas / Vapor	0	0	1		1	0	0.00	0	4		5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	2		2	0	0.00	0	0		0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	2		2	0	0.00	0	19		24	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.097
Emissions:													
VOC	VOC lbs/day							0.00					2.32
	VOC tons/yr							0.00					0.42
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.04
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.20
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				25%
Unit				Tank Truck Unloading Rack No. 11					Tank Truck Unloading Rack No. 12/13			
Process/System				P08S09					P08S10 & P08S11			
Existing Process/System Descriptor				Asphalt Tank Truck Load/Unloading Rack No. 11					Asphalt Truck Unloading Rack No. 12 & Asphalt Truck Load/Unloading Rack No. 13			
Description of Modification				Converted to caustic unloading rack; no VOC					Racks 12 and 13 are being combined into a single rack			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Fresh Caustic					Distillate fuel oil no. 2
	Ethylbenzene lbs/yr							0.00					0.47
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.09
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.12
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.38
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.32
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					2.20
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.28
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					1.32

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%				
Unit				Tank Truck Unloading Rack No. 14					Equipment removed				
Process/System				P08S12					P08S13				
Existing Process/System Descriptor				Fuel Oil/Gas Oil Tank Truck Loading Rack No. 14					Cutback Asphalt Tank Truck Loading Facility No. 15				
Description of Modification				Gas oil/fuel oil to citric acid unloading					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Citric Acid					Removed
Component Counts:													
Valves	Bellows Sealed Valves	0	0				0	0.00	0		0	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				0	0.00	0		0	0	0.00
Program)	Light Liquid	300	3.5E-04				0	0.00	0		0	0	0.00
	Heavy Liquid	100	1.6E-04	15		15	0	0.00	16		16	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				0	0.00	0		0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	4		4	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03				0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				0	0.00	0		0	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				0	0.00	25		25	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04				0	0.00	0		0	0	0.00
	Heavy Liquid	100	1.0E-04				0	0.00	19		19	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0				0	0.00	0		0	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04				0	0.00	0		0	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit				Tank Truck Unloading Rack No. 14					Equipment removed			
Process/System				P08S12					P08S13			
Existing Process/System Descriptor				Fuel Oil/Gas Oil Tank Truck Loading Rack No. 14					Cutback Asphalt Tank Truck Loading Facility No. 15			
Description of Modification				Gas oil/fuel oil to citric acid unloading					Equipment removed			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Citric Acid					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%				
Unit				Tank Truck Unloading Rack No. 16					Tank Truck Unloading Rack No. 17				
Process/System				P08S14					P08S15				
Existing Process/System Descriptor				Asphalt Tank Truck Unloading Facility No. 16					Asphalt Tank Truck Unloading Facility No. 17				
Description of Modification				Asphalt unloading to raw feedstock unloading					Asphalt unloading to raw feedstock unloading				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Raw Feed					Raw Feed
Component Counts:													
Valves	Bellows Sealed Valves	0	0				0	0.00				0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				0	0.00				0	0.00
Program)	Light Liquid	300	3.5E-04				0	0.00				0	0.00
	Heavy Liquid	100	1.6E-04				0	0.00				0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				0	0.00				0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				0	0.00				0	0.00
Compressors	Gas / Vapor	500	1.0E-03				0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				0	0.00				0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				0	0.00				0	0.00
Connectors	GV/Light Liquid	300	2.2E-04				0	0.00				0	0.00
	Heavy Liquid	100	1.0E-04				0	0.00				0	0.00
Pressure Relief Valves	Gas / Vapor	0	0				0	0.00				0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				0	0.00				0	0.00
Other	GV/Light Liquid	300	7.5E-04				0	0.00				0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				0	0.00				0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit				Tank Truck Unloading Rack No. 16					Tank Truck Unloading Rack No. 17			
Process/System				P08S14					P08S15			
Existing Process/System Descriptor				Asphalt Tank Truck Unloading Facility No. 16					Asphalt Tank Truck Unloading Facility No. 17			
Description of Modification				Asphalt unloading to raw feedstock unloading					Asphalt unloading to raw feedstock unloading			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Raw Feed					Raw Feed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Tank Truck Loading Rack No. 18					Tank Truck Loading Rack No. 19				
Process/System				P08S16					P08S17				
Existing Process/System Descriptor				Fuel Oil/Light Products Truck Loading Facility No. 18					Fuel Oil/Diesel/Jet Fuel Tank Truck Loading Rack No. 19				
Description of Modification									No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Recovered Oil					Jet Kerosene
Component Counts:													
Valves	Bellows Sealed Valves	0	0	3			4	0.00	2			3	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00				0	0.00
Program)	Light Liquid	300	3.5E-04	25			32	0.01				0	0.00
	Heavy Liquid	100	1.6E-04	0			0	0.00	87			109	0.02
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00				0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00				0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00				0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	31			39	0.02				0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	102			128	0.03
Connectors	GV/Light Liquid	300	2.2E-04	110			138	0.03				0	0.00
	Heavy Liquid	100	1.0E-04	0			0	0.00	329			412	0.04
Pressure Relief Valves	Gas / Vapor	0	0	2			3	0.00	4			5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00				0	0.00
Other	GV/Light Liquid	300	7.5E-04	7			9	0.01				0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	21			27	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.071					0.101
Emissions:													
VOC	VOC lbs/day							1.70					2.42
	VOC tons/yr							0.31					0.44
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.47					0.09
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.54					1.94
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit				Tank Truck Loading Rack No. 18					Tank Truck Loading Rack No. 19				
Process/System				P08S16					P08S17				
Existing Process/System Descriptor				Fuel Oil/Light Products Truck Loading Facility No. 18					Fuel Oil/Diesel/Jet Fuel Tank Truck Loading Rack No. 19				
Description of Modification									No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Recovered Oil					Jet Kerosene
	Ethylbenzene lbs/yr							0.81					1.93
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							2.28					0.03
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.01					0.04
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.14					0.52
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.01					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.39					0.42
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							1.66					0.48
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							4.84					11.05
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							4.78					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							6.66					5.76

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Tank Truck Loading Rack No. 20					Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21				
Process/System				P08S18					P08S19				
Existing Process/System Descriptor				Gasoline Tank Truck Loading Rack No. 20					Vapor Recovery for Gasoline Loading Facility No. 20 & 21				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Gasoline (TVP 10.99)					Gasoline (TVP 10.99)
Component Counts:													
Valves	Bellows Sealed Valves	0	0	13			17	0.00	25			32	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	22			28	0.01
Program)	Light Liquid	300	3.5E-04	64			80	0.03	116			145	0.05
	Heavy Liquid	100	1.6E-04	0			0	0.00	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	3			3	0.02
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	1			1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	1			1	0.00
Flanges	GV/Light Liquid	300	5.6E-04	100			125	0.07	135			169	0.09
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	375			469	0.11	852			1065	0.24
	Heavy Liquid	100	1.0E-04	0			0	0.00	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	4			5	0.00	5			7	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	19			24	0.02	10			13	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.221					0.423
Emissions:													
VOC	VOC lbs/day							5.30					10.15
	VOC tons/yr							0.97					1.85
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							11.31					3.94
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							4.28					1.54
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit				Tank Truck Loading Rack No. 20					Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21				
Process/System				P08S18					P08S19				
Existing Process/System Descriptor				Gasoline Tank Truck Loading Rack No. 20					Vapor Recovery for Gasoline Loading Facility No. 20 & 21				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Gasoline (TVP 10.99)					Gasoline (TVP 10.99)
	Ethylbenzene lbs/yr							7.92					0.26
Hexane (n)	n-Hexane lbs/hr							0.01					0.00
	n-Hexane lbs/yr							58.08					32.66
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.33					0.01
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.35					0.16
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							3.68					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							37.37					3.79
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.01					0.00
	1,2,4-Trimethylbenzene lbs/yr							57.31					0.39
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.01					0.00
	2,2,4-Trimethylpentane lbs/yr							120.81					21.65
Xylenes (mixed isomers)	Xylenes lbs/hr							0.02					0.00
	Xylenes lbs/yr							135.33					3.87

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				LPG Tank Truck Loading/Unloading Rack No. 22					Gasoline Blendstock Tank Truck Unloading Rack No. 23				
Process/System				P08S20					P08S21				
Existing Process/System Descriptor				LPG Tank Truck Loading/Unloading Rack No. 22					Gasoline Blendstock Tank Truck Unloading Rack No. 23				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service				Naphtha					Gasoline (TVP 10.99)				
Component Counts:													
Valves	Bellows Sealed Valves	0	0	23			29	0.00	4			5	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	8			10	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04	63			79	0.03	9			12	0.00
	Heavy Liquid	100	1.6E-04	0			0	0.00	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	2			2	0.01	1			1	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	96			120	0.07	17			22	0.01
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	138			173	0.04	40			50	0.01
	Heavy Liquid	100	1.0E-04	0			0	0.00	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	6			8	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	2			3	0.00	0			0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.150					0.033
Emissions:													
VOC	VOC lbs/day							3.60					0.79
	VOC tons/yr							0.66					0.14
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							7.68					1.69
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							2.90					0.64
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit				LPG Tank Truck Loading/Unloading Rack No. 22					Gasoline Blendstock Tank Truck Unloading Rack No. 23				
Process/System				P08S20					P08S21				
Existing Process/System Descriptor				LPG Tank Truck Loading/Unloading Rack No. 22					Gasoline Blendstock Tank Truck Unloading Rack No. 23				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Naphtha					Gasoline (TVP 10.99)
	Ethylbenzene lbs/yr							5.38					1.18
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							5.52					8.69
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.23					0.05
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.24					0.05
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							2.50					0.55
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							25.37					5.59
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							38.90					8.57
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.01					0.00
	2,2,4-Trimethylpentane lbs/yr							82.01					18.07
Xylenes (mixed isomers)	Xylenes lbs/hr							0.01					0.00
	Xylenes lbs/yr							91.87					20.24

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%				0%					
Unit				Equipment removed					Organic Tank/Rail Car Loading/Unloading Facility				
Process/System				P08S23					P08S25				
Existing Process/System Descriptor				Asphalt Tank Truck Unloading Rack No. 26					Organic Tank/Rail Car Loading/Unloading Facility				
Description of Modification				Equipment removed					Remove D206, D210; move D253 to spur 3; convert D924 and D965 each from 8 to 10 unloading spots; add new Track 6 with 7 unloading arms, all in raw feedstock service (zero VOC)				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed						Raw Feed	
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0		0	0	0.00	54		54	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0		0	0	0.00	0		0	0	0.00
Program)	Light Liquid	300	3.5E-04	0		0	0	0.00	24		24	0	0.00
	Heavy Liquid	100	1.6E-04	1		1	0	0.00	88		88	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	1		1	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	1		1	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0		0	0	0.00	70		70	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	4		4	0	0.00	77		77	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0		0	0	0.00	234		234	0	0.00
	Heavy Liquid	100	1.0E-04	2		2	0	0.00	300		300	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0		0	0	0.00	2		2	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	0		0	0	0.00	5		5	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	5		5	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%					
Unit				Equipment removed					Organic Tank/Rail Car Loading/Unloading Facility					
Process/System				P08S23					P08S25					
Existing Process/System Descriptor				Asphalt Tank Truck Unloading Rack No. 26					Organic Tank/Rail Car Loading/Unloading Facility					
Description of Modification				Equipment removed					Remove D206, D210; move D253 to spur 3; convert D924 and D965 each from 8 to 10 unloading spots; add new Track 6 with 7 unloading arms, all in raw feedstock service (zero VOC)					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Raw Feed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%					25%
Unit					Equipment removed				Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21				
Process/System					P08S26				P08S27				
Existing Process/System Descriptor					Sulfur Truck Loading Rack				Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21				
Description of Modification					Equipment removed				No change to component counts; changed to LL service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service													Gasoline (TVP 10.99)
Component Counts:													
Valves	Bellows Sealed Valves	0	0				0	0.00	4			5	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				0	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04				0	0.00	0	60		75	0.03
	Heavy Liquid	100	1.6E-04				0	0.00	60		60	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				0	0.00	0			0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03				0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				0	0.00	0	64		80	0.04
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				0	0.00	64		64	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04				0	0.00	0	279		349	0.08
	Heavy Liquid	100	1.0E-04				0	0.00	279		279	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0				0	0.00	4			5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04				0	0.00	0	15		19	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				0	0.00	15		15	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.164
Emissions:													
VOC	VOC lbs/day							0.00					3.93
	VOC tons/yr							0.00					0.72
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					8.37
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					3.17
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			0%				25%
Unit				Equipment removed				Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21			
Process/System				P08S26				P08S27			
Existing Process/System Descriptor				Sulfur Truck Loading Rack				Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21			
Description of Modification				Equipment removed				No change to component counts; changed to LL service			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service													Gasoline (TVP 10.99)
	Ethylbenzene lbs/yr							0.00					5.86
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					42.98
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.25
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.26
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					2.72
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					27.65
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					42.41
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.01
	2,2,4-Trimethylpentane lbs/yr							0.00					89.41
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.01
	Xylenes lbs/yr							0.00					100.15

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Spent Caustic Loading Rack					Organic Tank/Rail Car Loading/Unloading Facility, SP 3 (Unloading)				
Process/System				P08S28					P08S29				
Existing Process/System Descriptor				Spent Caustic Loading Rack					Organic Tank/Rail Car Loading/Unloading Facility, SP 3				
Description of Modification				No change to component counts					Change from 4 to 7 unloading arms; convert from renewable fuels feedstock to ethanol, iso-octane, alkylate, bio/ renewable jet, diesel service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Spent Caustic					Alkylate
Component Counts:													
Valves	Bellows Sealed Valves	0	0	2			3	0.00	0			0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04	0			0	0.00	0	42		53	0.02
	Heavy Liquid	100	1.6E-04	19			24	0.00	45		45	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	0	2		2	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	1		1	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0			0	0.00	0	46		58	0.03
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	23			29	0.01	64		64	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0			0	0.00	0	58		73	0.02
	Heavy Liquid	100	1.0E-04	83			104	0.01	74		74	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	1			2	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	0			0	0.00	0	2		3	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	5			7	0.00	3		3	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.024					0.080
Emissions:													
VOC	VOC lbs/day							0.58					1.93
	VOC tons/yr							0.11					0.35
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					4.11
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					1.56
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%					
Unit				Spent Caustic Loading Rack					Organic Tank/Rail Car Loading/Unloading Facility, SP 3 (Unloading)					
Process/System				P08S28					P08S29					
Existing Process/System Descriptor				Spent Caustic Loading Rack					Organic Tank/Rail Car Loading/Unloading Facility, SP 3					
Description of Modification				No change to component counts					Change from 4 to 7 unloading arms; convert from renewable fuels feedstock to ethanol, iso-octane, alkylate, bio/ renewable jet, diesel service					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Spent Caustic					Alkylate	
	Ethylbenzene lbs/yr							0.00					2.88	
Hexane (n)	n-Hexane lbs/hr							0.00					0.00	
	n-Hexane lbs/yr							0.00					2.96	
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00	
	Hydrogen Chloride lbs/yr							0.00					0.00	
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00	
	Hydrogen Sulfide lbs/yr							0.00					0.00	
Isoprene	Isoprene lbs/hr							0.00					0.00	
	Isoprene lbs/yr							0.00					0.00	
Cumene	Isopropyl benzene lbs/hr							0.00					0.00	
	Isopropyl benzene lbs/yr							0.00					0.12	
Methyl Alcohol	Methanol lbs/hr							0.00					0.00	
	Methanol lbs/yr							0.00					0.13	
Naphthalene	Naphthalene lbs/hr							0.00					0.00	
	Naphthalene lbs/yr							0.00					1.34	
Propylene	Propylene lbs/hr							0.00					0.00	
	Propylene lbs/yr							0.00					0.00	
Toluene	Toluene lbs/hr							0.00					0.00	
	Toluene lbs/yr							0.00					13.59	
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00	
	1,2,4-Trimethylbenzene lbs/yr							0.00					20.84	
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.01	
	2,2,4-Trimethylpentane lbs/yr							0.00					43.92	
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.01	
	Xylenes lbs/yr							0.00					49.20	

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Organic Tank/Rail Car Loading/Unloading Facility, SP 3 (Loading)					Bulk DMDS Sulfiding Agent Unloading Facility				
Process/System				P08S29					P08S30				
Existing Process/System Descriptor				Organic Tank/Rail Car Loading/Unloading Facility, SP 3					Bulk DMDS Sulfiding Agent Unloading Facility				
Description of Modification				Change from 4 to 7 loading arms; convert from gas oil to bio/ renewable diesel/jet, pretreat clay, and spent caustic service					No change to component counts				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Diesel/ Jet/ Spent Caustic					DMDS
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	0		0	0.00	12			15	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0		0	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04	0	0		0	0.00	25			32	0.01
	Heavy Liquid	100	1.6E-04	0	79		99	0.02	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	4			4	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	0			0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	1			1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	2		2	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	0		0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	0		0	0.00	56			70	0.04
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	112		140	0.04	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	0		0	0.00	47			59	0.01
	Heavy Liquid	100	1.0E-04	0	130		163	0.02	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	0		0	0.00	1			2	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	0		0	0.00	2			3	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	6		8	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.074					0.068
Emissions:													
VOC	VOC lbs/day							1.79					1.63
	VOC tons/yr							0.33					0.30
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.07					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							1.43					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%					
Unit				Organic Tank/Rail Car Loading/Unloading Facility, SP 3 (Loading)					Bulk DMDS Sulfiding Agent Unloading Facility					
Process/System				P08S29					P08S30					
Existing Process/System Descriptor				Organic Tank/Rail Car Loading/Unloading Facility, SP 3					Bulk DMDS Sulfiding Agent Unloading Facility					
Description of Modification				Change from 4 to 7 loading arms; convert from gas oil to bio/ renewable diesel/jet, pretreat clay, and spent caustic service					No change to component counts					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Diesel/ Jet/ Spent Caustic					DMDS	
	Ethylbenzene lbs/yr							1.42						0.00
Hexane (n)	n-Hexane lbs/hr							0.00						0.00
	n-Hexane lbs/yr							0.07						0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00						0.00
	Hydrogen Chloride lbs/yr							0.00						0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00						0.00
	Hydrogen Sulfide lbs/yr							0.00						0.00
Isoprene	Isoprene lbs/hr							0.00						0.00
	Isoprene lbs/yr							0.03						0.00
Cumene	Isopropyl benzene lbs/hr							0.00						0.00
	Isopropyl benzene lbs/yr							0.38						0.00
Methyl Alcohol	Methanol lbs/hr							0.00						0.00
	Methanol lbs/yr							0.00						0.00
Naphthalene	Naphthalene lbs/hr							0.00						0.00
	Naphthalene lbs/yr							0.31						0.00
Propylene	Propylene lbs/hr							0.00						0.00
	Propylene lbs/yr							0.00						0.00
Toluene	Toluene lbs/hr							0.00						0.00
	Toluene lbs/yr							0.35						0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00						0.00
	1,2,4-Trimethylbenzene lbs/yr							8.15						0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00						0.00
	2,2,4-Trimethylpentane lbs/yr							0.22						0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00						0.00
	Xylenes lbs/yr							4.25						0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Vapor Recovery for Spur 3 and Rack 18					Wastewater Separation Fac (Crude Unit Area)				
Process/System				New					P09S01				
Existing Process/System Descriptor				New					Wastewater Separation Fac (Crude Unit Area)				
Description of Modification				New unit					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Recovered Oil					Wastewater Treatment
Component Counts:													
Valves	Bellows Sealed Valves	0	0	25			32	0.00	32			40	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	22			28	0.01	0			0	0.00
Program)	Light Liquid	300	3.5E-04	116			145	0.05	110			138	0.05
	Heavy Liquid	100	1.6E-04	0			0	0.00	1			2	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	3			3	0.02	6			6	0.03
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	1			1	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	1			1	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	135			169	0.09	176			220	0.12
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	852			1065	0.24	429			537	0.12
	Heavy Liquid	100	1.0E-04	0			0	0.00	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	5			7	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	39			49	0.05
Other	GV/Light Liquid	300	7.5E-04	10			13	0.01	50			63	0.05
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.423					0.422
Emissions:													
VOC	VOC lbs/day							10.15					10.13
	VOC tons/yr							1.85					1.85
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							1.75					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							2.07					0.32
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%					
Unit				Vapor Recovery for Spur 3 and Rack 18					Wastewater Separation Fac (Crude Unit Area)					
Process/System				New					P09S01					
Existing Process/System Descriptor				New					Wastewater Separation Fac (Crude Unit Area)					
Description of Modification				New unit					No change					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Recovered Oil					Wastewater Treatment	
	Ethylbenzene lbs/yr							0.28						0.48
Hexane (n)	n-Hexane lbs/hr							0.00						0.00
	n-Hexane lbs/yr							13.78						1.36
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00						0.00
	Hydrogen Chloride lbs/yr							0.00						0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00						0.00
	Hydrogen Sulfide lbs/yr							0.23						0.00
Isoprene	Isoprene lbs/hr							0.00						0.00
	Isoprene lbs/yr							0.14						0.00
Cumene	Isopropyl benzene lbs/hr							0.00						0.00
	Isopropyl benzene lbs/yr							0.02						0.09
Methyl Alcohol	Methanol lbs/hr							0.00						0.00
	Methanol lbs/yr							0.07						0.01
Naphthalene	Naphthalene lbs/hr							0.00						0.00
	Naphthalene lbs/yr							0.00						0.23
Propylene	Propylene lbs/hr							0.00						0.00
	Propylene lbs/yr							0.00						0.00
Toluene	Toluene lbs/hr							0.00						0.00
	Toluene lbs/yr							1.81						0.99
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00						0.00
	1,2,4-Trimethylbenzene lbs/yr							0.35						2.89
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00						0.00
	2,2,4-Trimethylpentane lbs/yr							9.20						2.85
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00						0.00
	Xylenes lbs/yr							2.04						3.98

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					0%				
Unit				Wastewater Separation Fac (Hydroprocessing Area)					Oil-Water Separation Fac				
Process/System				P09S02					P09S03				
Existing Process/System Descriptor				Wastewater Separation Fac (Hydroprocessing Area)					Oil-Water Separation Fac (Asphalt Plant)				
Description of Modification				No change					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					Removed
Component Counts:													
Valves	Bellows Sealed Valves	0	0	96			120	0.00	2		2	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	7			9	0.00	0		0	0	0.00
Program)	Light Liquid	300	3.5E-04	330			413	0.15	204		204	0	0.00
	Heavy Liquid	100	1.6E-04	0			0	0.00	0		0	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	11			11	0.06	6		6	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	410			513	0.29	229		229	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	953			1192	0.27	503		503	0	0.00
	Heavy Liquid	100	1.0E-04	0			0	0.00	0		0	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	3			4	0.00	0		0	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	119			149	0.15	0		0	0	0.00
Other	GV/Light Liquid	300	7.5E-04	61			77	0.06	8		8	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.973					0.000
Emissions:													
VOC	VOC lbs/day							23.36					0.00
	VOC tons/yr							4.26					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.74					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					0%
Unit				Wastewater Separation Fac (Hydroprocessing Area)					Oil-Water Separation Fac				
Process/System				P09S02					P09S03				
Existing Process/System Descriptor				Wastewater Separation Fac (Hydroprocessing Area)					Oil-Water Separation Fac (Asphalt Plant)				
Description of Modification				No change					Equipment removed or out of service				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					Removed
	Ethylbenzene lbs/yr							1.11					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							3.14					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.01					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.20					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.02					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.54					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							2.29					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							6.67					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							6.58					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							9.17					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Lift Station Sump					Storage Tanks: Total				
Process/System				P9S4					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Lift Station Sump					Storage Tanks				
Description of Modification				No change									
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0			0	0.00	53	66	1	148	
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	16	43	3	70	
Program)	Light Liquid	300	3.5E-04	0			0	0.00	919	476	121	1593	
	Heavy Liquid	100	1.6E-04	0			0	0.00	3,940	1352	1532	4700	
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0	0	0	0	
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00	39	0	8	31	
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0	12	0	12	
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	90	29	12	107	
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0	0	0	0	
Flanges	GV/Light Liquid	300	5.6E-04	0			0	0.00	1,416	721	188	2437	
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	6,979	1387	2690	7095	
Connectors	GV/Light Liquid	300	2.2E-04	0			0	0.00	2,191	829	300	3400	
	Heavy Liquid	100	1.0E-04	0			0	0.00	6,951	1979	2618	7890	
Pressure Relief Valves	Gas / Vapor	0	0	0			0	0.00	166	17	34	187	
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	61			77	0.08	0	31	0	39	
Other	GV/Light Liquid	300	7.5E-04	2			3	0.00	69	0	15	68	
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	183	146	39	363	
Operating Time:													
Hours per Day								24					
Days per Year								365					
Emission Factors:													
VOC EF (lbs/hr)								0.082					
Emissions:													
VOC	VOC lbs/day							1.97					
	VOC tons/yr							0.36					
Ammonia	Ammonia lbs/hr							0.00					
	Ammonia lbs/yr							0.00					
Benzene	Benzene lbs/hr							0.00					
	Benzene lbs/yr							0.00					
Cyclohexane	Cyclohexane lbs/hr							0.00					
	Cyclohexane lbs/yr							0.06					
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					
	1,2-Dichlorobenzene lbs/yr							0.00					
Ethylbenzene	Ethylbenzene lbs/hr							0.00					

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	25%				25%				
Unit				Lift Station Sump					Storage Tanks: Total				
Process/System				P9S4					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Lift Station Sump					Storage Tanks				
Description of Modification				No change									
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					
	Ethylbenzene lbs/yr							0.09					
Hexane (n)	n-Hexane lbs/hr							0.00					
	n-Hexane lbs/yr							0.26					
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					
	Hydrogen Chloride lbs/yr							0.00					
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					
	Hydrogen Sulfide lbs/yr							0.00					
Isoprene	Isoprene lbs/hr							0.00					
	Isoprene lbs/yr							0.00					
Cumene	Isopropyl benzene lbs/hr							0.00					
	Isopropyl benzene lbs/yr							0.02					
Methyl Alcohol	Methanol lbs/hr							0.00					
	Methanol lbs/yr							0.00					
Naphthalene	Naphthalene lbs/hr							0.00					
	Naphthalene lbs/yr							0.05					
Propylene	Propylene lbs/hr							0.00					
	Propylene lbs/yr							0.00					
Toluene	Toluene lbs/hr							0.00					
	Toluene lbs/yr							0.19					
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					
	1,2,4-Trimethylbenzene lbs/yr							0.56					
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					
	2,2,4-Trimethylpentane lbs/yr							0.55					
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					
	Xylenes lbs/yr							0.77					

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	4 / 36 Tanks				10 / 36 Tanks				
Unit				Storage Tanks: TKFUG					Storage Tanks: FUGTKFM2				
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Storage Tanks T-50005, T-50006, T-50008, T-150001					Storage Tanks T-518, T-10008, T-25005, T-25006, T-25007, T-25008, T-25009, T-50001, T-50002, T-50003				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: TKFUG					Storage Tanks: FUGTKFM2
Component Counts:													
Valves	Bellows Sealed Valves	0	0				17	0.00				42	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				8	0.00				20	0.01
Program)	Light Liquid	300	3.5E-04				177	0.06				443	0.16
	Heavy Liquid	100	1.6E-04				523	0.08				1306	0.20
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				4	0.02				9	0.05
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				2	0.00				4	0.01
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				12	0.02				30	0.06
Compressors	Gas / Vapor	500	1.0E-03				0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				271	0.15				677	0.38
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				789	0.20				1971	0.50
Connectors	GV/Light Liquid	300	2.2E-04				378	0.08				945	0.21
	Heavy Liquid	100	1.0E-04				877	0.09				2192	0.22
Pressure Relief Valves	Gas / Vapor	0	0				21	0.00				52	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				5	0.01				11	0.01
Other	GV/Light Liquid	300	7.5E-04				8	0.01				19	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				41	0.02				101	0.04
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.748					1.858
Emissions:													
VOC	VOC lbs/day							17.94					44.59
	VOC tons/yr							3.27					8.14
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.01
	Benzene lbs/yr							0.65					48.18
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							14.34					32.38
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.01

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			4 / 36 Tanks				10 / 36 Tanks	
Unit				Storage Tanks: TKFUG					Storage Tanks: FUGTKFM2			
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5			
Existing Process/System Descriptor				Storage Tanks T-50005, T-50006, T-50008, T-150001					Storage Tanks T-518, T-10008, T-25005, T-25006, T-25007, T-25008, T-25009, T-50001, T-50002, T-50003			
Description of Modification												
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: TKFUG					Storage Tanks: FUGTKFM2
	Ethylbenzene lbs/yr							14.28					47.69
Hexane (n)	n-Hexane lbs/hr							0.00					0.03
	n-Hexane lbs/yr							0.23					244.97
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.33					0.33
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							3.86					5.28
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					1.48
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							3.08					18.62
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.02
	Toluene lbs/yr							3.56					161.04
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.01					0.04
	1,2,4-Trimethylbenzene lbs/yr							81.86					323.54
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.06
	2,2,4-Trimethylpentane lbs/yr							0.00					509.07
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.07
	Xylenes lbs/yr							42.70					613.05

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				5 / 36 Tanks					2 / 36 Tanks				
Unit				Storage Tanks: FUGTKFM3					Storage Tanks: FUGTKFM4				
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Storage Tanks T-1201, T-25001, T-25002, T-25003, T-25004, T-50004					Storage Tanks T-12501, T-12502				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM3					Storage Tanks: FUGTKFM4
Component Counts:													
Valves	Bellows Sealed Valves	0	0				21	0.00				9	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				10	0.00				4	0.00
Program)	Light Liquid	300	3.5E-04				222	0.08				89	0.03
	Heavy Liquid	100	1.6E-04				653	0.10				262	0.04
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				5	0.03				2	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				2	0.00				1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				15	0.03				6	0.01
Compressors	Gas / Vapor	500	1.0E-03				0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				339	0.19				136	0.08
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				986	0.25				395	0.10
Connectors	GV/Light Liquid	300	2.2E-04				473	0.11				189	0.04
	Heavy Liquid	100	1.0E-04				1096	0.11				439	0.04
Pressure Relief Valves	Gas / Vapor	0	0				26	0.00				11	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				6	0.01				3	0.00
Other	GV/Light Liquid	300	7.5E-04				10	0.01				4	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				51	0.02				21	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.933					0.375
Emissions:													
VOC	VOC lbs/day							22.40					9.00
	VOC tons/yr							4.09					1.64
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							38.37					2.47
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							18.04					2.84
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				5 / 36 Tanks					2 / 36 Tanks				
Unit				Storage Tanks: FUGTKFM3					Storage Tanks: FUGTKFM4				
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Storage Tanks T-1201, T-25001, T-25002, T-25003, T-25004, T-50004					Storage Tanks T-12501, T-12502				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM3					Storage Tanks: FUGTKFM4
	Ethylbenzene lbs/yr							30.32					4.29
Hexane (n)	n-Hexane lbs/hr							0.02					0.00
	n-Hexane lbs/yr							196.31					12.10
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.08					0.03
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							2.09					0.76
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							1.18					0.07
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							13.20					2.07
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.01					0.00
	Toluene lbs/yr							127.14					8.81
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.02					0.00
	1,2,4-Trimethylbenzene lbs/yr							214.08					25.70
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.05					0.00
	2,2,4-Trimethylpentane lbs/yr							408.20					25.35
Xylenes (mixed isomers)	Xylenes lbs/hr							0.05					0.00
	Xylenes lbs/yr							467.92					35.34

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			7 / 36 Tanks			5 / 36 Tanks	
Unit						Storage Tanks: FUGTKFM5			Storage Tanks: FUGTKFM7		
Process/System						P10S01, P10S02, P10S03, P10S04, P10S5			P10S01, P10S02, P10S03, P10S04, P10S5		
Existing Process/System Descriptor						Storage Tanks T-10005, T-10006, T-10007, T-20003, T-20004, T-20005, T-35001			Storage Tanks T-2002, T-2014, T-3001, T-6001, T-6002		
Description of Modification											
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM5					Storage Tanks: FUGTKFM7
Component Counts:													
Valves	Bellows Sealed Valves	0	0				29	0.00				21	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				14	0.00				10	0.00
Program)	Light Liquid	300	3.5E-04				310	0.11				222	0.08
	Heavy Liquid	100	1.6E-04				914	0.14				653	0.10
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				7	0.04				5	0.03
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				3	0.01				2	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				21	0.04				15	0.03
Compressors	Gas / Vapor	500	1.0E-03				0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				474	0.26				339	0.19
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				1380	0.35				986	0.25
Connectors	GV/Light Liquid	300	2.2E-04				662	0.15				473	0.11
	Heavy Liquid	100	1.0E-04				1535	0.15				1096	0.11
Pressure Relief Valves	Gas / Vapor	0	0				37	0.00				26	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				8	0.01				6	0.01
Other	GV/Light Liquid	300	7.5E-04				14	0.01				10	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				71	0.03				51	0.02
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								1.306					0.933
Emissions:													
VOC	VOC lbs/day							31.34					22.40
	VOC tons/yr							5.72					4.09
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							10.52					13.66
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							25.09					7.26
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				7 / 36 Tanks					5 / 36 Tanks				
Unit				Storage Tanks: FUGTKFM5					Storage Tanks: FUGTKFM7				
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Storage Tanks T-10005, T-10006, T-10007, T-20003, T-20004, T-20005, T-35001					Storage Tanks T-2002, T-2014, T-3001, T-6001, T-6002				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM5					Storage Tanks: FUGTKFM7
	Ethylbenzene lbs/yr							28.06					13.30
Hexane (n)	n-Hexane lbs/hr							0.01					0.01
	n-Hexane lbs/yr							49.37					69.29
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.01					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.49					0.02
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							6.06					1.39
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.30					0.41
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							7.71					7.01
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.01
	Toluene lbs/yr							36.88					46.47
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.02					0.01
	1,2,4-Trimethylbenzene lbs/yr							170.95					87.13
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.01					0.02
	2,2,4-Trimethylpentane lbs/yr							101.98					144.68
Xylenes (mixed isomers)	Xylenes lbs/hr							0.02					0.02
	Xylenes lbs/yr							178.17					171.25

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			2 / 36 Tanks			1 / 36 Tanks	
Unit				Storage Tanks: FUGTKFM9				Storage Tanks: FUGT1000			
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5				P10S01, P10S02, P10S03, P10S04, P10S5			
Existing Process/System Descriptor				Storage Tanks T-10001, T-10009				Storage Tank T-1000			
Description of Modification											
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM9					Storage Tanks: FUGT1000
Component Counts:													
Valves	Bellows Sealed Valves	0	0				9	0.00				5	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04				4	0.00				2	0.00
Program)	Light Liquid	300	3.5E-04				89	0.03				45	0.02
	Heavy Liquid	100	1.6E-04				262	0.04				131	0.02
Pumps, Sealless Type	Light Liquid	0	0.0E+00				0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03				2	0.01				1	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03				1	0.00				1	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				6	0.01				3	0.01
Compressors	Gas / Vapor	500	1.0E-03				0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04				136	0.08				68	0.04
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				395	0.10				198	0.05
Connectors	GV/Light Liquid	300	2.2E-04				189	0.04				95	0.02
	Heavy Liquid	100	1.0E-04				439	0.04				220	0.02
Pressure Relief Valves	Gas / Vapor	0	0				11	0.00				6	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				3	0.00				2	0.00
Other	GV/Light Liquid	300	7.5E-04				4	0.00				2	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				21	0.01				11	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.375					0.190
Emissions:													
VOC	VOC lbs/day							9.00					4.55
	VOC tons/yr							1.64					0.83
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.28					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor: 2 / 36 Tanks 1 / 36 Tanks

Unit				Storage Tanks: FUGTKFM9					Storage Tanks: FUGT1000				
Process/System				P10S01, P10S02, P10S03, P10S04, P10S5					P10S01, P10S02, P10S03, P10S04, P10S5				
Existing Process/System Descriptor				Storage Tanks T-10001, T-10009					Storage Tank T-1000				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Storage Tanks: FUGTKFM9					Storage Tanks: FUGT1000
	Ethylbenzene lbs/yr							0.43					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							1.21					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.08					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.01					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.21					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.88					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							2.57					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							2.54					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							3.53					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					0%				
Unit				Lakewood					Cogeneration				
Process/System				Lakewood					P11S03				
Existing Process/System Descriptor				Lakewood Storage Tanks T-55001, T-55002 and Remediation System					Cogeneration				
Description of Modification				No change					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service				Lakewood					Natural Gas Components Only				
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0			0	0.00				0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00				0	0.00
Program)	Light Liquid	300	3.5E-04	6			8	0.00				0	0.00
	Heavy Liquid	100	1.6E-04	19			24	0.00				0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0			0	0.00				0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00				0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	10			10	0.02				0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00				0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	5			7	0.00				0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	20			25	0.01				0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	17			22	0.00				0	0.00
	Heavy Liquid	100	1.0E-04	59			74	0.01				0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	12			15	0.00				0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00				0	0.00
Other	GV/Light Liquid	300	7.5E-04	0			0	0.00				0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	1			2	0.00				0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.050					0.000
Emissions:													
VOC	VOC lbs/day							1.19					0.00
	VOC tons/yr							0.22					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.04					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.95					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			25%				0%
Unit				Lakewood				Cogeneration			
Process/System				Lakewood				P11S03			
Existing Process/System Descriptor				Lakewood Storage Tanks T-55001, T-55002 and Remediation System				Cogeneration			
Description of Modification				No change				Equipment removed			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Lakewood					Natural Gas Components Only
	Ethylbenzene lbs/yr							0.95					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.02					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.02					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.26					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.20					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.24					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							5.43					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							2.83					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Boilers					Pipeline Flushing/Receiving Unit				
Process/System				P12S01					P13S01				
Existing Process/System Descriptor				Boilers					Pipeline Flushing/Receiving Unit				
Description of Modification				No change to VOC component counts (connecting to SCR)					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Jet Kerosene
Component Counts:													
Valves	Bellows Sealed Valves	0	0	3			4	0.00	4			5	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	76			95	0.03	0			0	0.00
Program)	Light Liquid	300	3.5E-04	6			8	0.00	15			19	0.01
	Heavy Liquid	100	1.6E-04	0			0	0.00	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1			1	0.01	0			0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	68			85	0.05	26			33	0.02
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	289			362	0.08	47			59	0.01
	Heavy Liquid	100	1.0E-04	0			0	0.00	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0			0	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	21			27	0.02	4			5	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.191					0.042
Emissions:													
VOC	VOC lbs/day							4.57					1.01
	VOC tons/yr							0.83					0.18
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.04
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.81
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.33					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%					
Unit				Boilers					Pipeline Flushing/Receiving Unit					
Process/System				P12S01					P13S01					
Existing Process/System Descriptor				Boilers					Pipeline Flushing/Receiving Unit					
Description of Modification				No change to VOC component counts (connecting to SCR)					No change					
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Renewable Fuel Gas					Jet Kerosene	
	Ethylbenzene lbs/yr							0.00					0.80	
Hexane (n)	n-Hexane lbs/hr							0.00					0.00	
	n-Hexane lbs/yr							9.01					0.01	
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00	
	Hydrogen Chloride lbs/yr							0.00					0.00	
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00	
	Hydrogen Sulfide lbs/yr							0.33					0.00	
Isoprene	Isoprene lbs/hr							0.00					0.00	
	Isoprene lbs/yr							0.00					0.02	
Cumene	Isopropyl benzene lbs/hr							0.00					0.00	
	Isopropyl benzene lbs/yr							0.00					0.22	
Methyl Alcohol	Methanol lbs/hr							0.00					0.00	
	Methanol lbs/yr							0.00					0.00	
Naphthalene	Naphthalene lbs/hr							0.00					0.00	
	Naphthalene lbs/yr							0.00					0.17	
Propylene	Propylene lbs/hr							0.00					0.00	
	Propylene lbs/yr							0.00					0.00	
Toluene	Toluene lbs/hr							0.00					0.00	
	Toluene lbs/yr							0.00					0.20	
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00	
	1,2,4-Trimethylbenzene lbs/yr							0.00					4.61	
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00	
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00	
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00	
	Xylenes lbs/yr							0.67					2.40	

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Soil Vapor Extraction Area 1					Fuel Gas System				
Process/System				P13S03					P13S06				
Existing Process/System Descriptor				Soil Vapor Extraction Area 1					Fuel Gas System				
Description of Modification				No change									
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	3			4	0.00	12	0		15	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0			0	0.00	123	29		190	0.07
Program)	Light Liquid	300	3.5E-04	27			34	0.01	46	0		58	0.02
	Heavy Liquid	100	1.6E-04	0			0	0.00	0	5		7	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	2			2	0.01	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0	0		0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	29			37	0.02	160	22		228	0.13
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0	4		5	0.00
Connectors	GV/Light Liquid	300	2.2E-04	155			194	0.04	405	81		608	0.14
	Heavy Liquid	100	1.0E-04	0			0	0.00	0	10		13	0.00
Pressure Relief Valves	Gas / Vapor	0	0	1			2	0.00	4	0		5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	6			8	0.01	13	1		18	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0	0		0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.093					0.368
Emissions:													
VOC	VOC lbs/day							2.23					8.84
	VOC tons/yr							0.41					1.61
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.16					0.65
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			25%				25%
Unit				Soil Vapor Extraction Area 1				Fuel Gas System			
Process/System				P13S03				P13S06			
Existing Process/System Descriptor				Soil Vapor Extraction Area 1				Fuel Gas System			
Description of Modification				No change							
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							4.39					17.42
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.16					0.65
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.33					1.29

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Soil Vapor Extraction System Area 234					Soil Vapor Extraction System Area 5				
Process/System				P13S07					P13S08				
Existing Process/System Descriptor				Soil Vapor Extraction System Area 234					Soil Vapor Extraction System Area 5				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0			0	0.00	0			0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	4			5	0.00	0			0	0.00
Program)	Light Liquid	300	3.5E-04	30			38	0.01	3			4	0.00
	Heavy Liquid	100	1.6E-04	0			0	0.00	0			0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1			1	0.01	1			1	0.01
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0			0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0			0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	9			12	0.01	5			7	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0			0	0.00	0			0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	149			187	0.04	12			15	0.00
	Heavy Liquid	100	1.0E-04	0			0	0.00	0			0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0			0	0.00	0			0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0			0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	1			2	0.00	0			0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0			0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.071					0.014
Emissions:													
VOC	VOC lbs/day							1.70					0.34
	VOC tons/yr							0.31					0.06
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.12					0.02
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Soil Vapor Extraction System Area 234					Soil Vapor Extraction System Area 5				
Process/System				P13S07					P13S08				
Existing Process/System Descriptor				Soil Vapor Extraction System Area 234					Soil Vapor Extraction System Area 5				
Description of Modification				No change					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							3.34					0.66
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.12					0.02
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.25					0.05

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Flare Vapor Recovery System					Refinery Flare System				
Process/System				P15S01					P15S02				
Existing Process/System Descriptor				Flare Vapor Recovery System					Refinery Flare System				
Description of Modification									No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	154	33		234	0.00	39			49	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	419	184		754	0.27	187			234	0.08
Program)	Light Liquid	300	3.5E-04	4	0		5	0.00	11			14	0.00
	Heavy Liquid	100	1.6E-04	0	0		0	0.00	1			2	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	6	0		6	0.03	3			3	0.02
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0		0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	2	0		2	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	310	81		489	0.27	117			147	0.08
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	0		0	0.00	2			3	0.00
Connectors	GV/Light Liquid	300	2.2E-04	1,425	951		2970	0.67	1,016			1270	0.28
	Heavy Liquid	100	1.0E-04	0	0		0	0.00	1			2	0.00
Pressure Relief Valves	Gas / Vapor	0	0	3	1		5	0.00	1			2	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	33	15		60	0.04	18			23	0.02
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0		0	0.00	0			0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								1.286					0.489
Emissions:													
VOC	VOC lbs/day							30.87					11.74
	VOC tons/yr							5.63					2.14
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							2.25					0.86
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit								Flare Vapor Recovery System					Refinery Flare System
Process/System								P15S01					P15S02
Existing Process/System Descriptor								Flare Vapor Recovery System					Refinery Flare System
Description of Modification												No change	
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.01					0.00
	n-Hexane lbs/yr							60.84					23.13
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							2.25					0.86
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							4.51					1.71

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Incineration System					SOx Scrubbing System				
Process/System				P15S03					P15S04				
Existing Process/System Descriptor				Incineration System					SOx Scrubbing System Serving Asphalt Blowing Plant				
Description of Modification				Modified to be part of Unit B H2S recovery					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Amine/Amine Regen					H2S Recovery
Component Counts:													
Valves	Bellows Sealed Valves	0	0	36	189		282	0.00	0			0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	51	18		87	0.03	37			47	0.02
Program)	Light Liquid	300	3.5E-04	6	0		8	0.00	46			58	0.02
	Heavy Liquid	100	1.6E-04	1	0		2	0.00	23			29	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	1	0		1	0.01	3			3	0.02
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0		0	0.00	0			0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	0		0	0.00	0			0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	108	147		319	0.18	85			107	0.06
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	3	0		4	0.00	35			44	0.01
Connectors	GV/Light Liquid	300	2.2E-04	248	518		958	0.21	182			228	0.05
	Heavy Liquid	100	1.0E-04	5	0		7	0.00	206			258	0.03
Pressure Relief Valves	Gas / Vapor	0	0	0	0		0	0.00	3			4	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	10	39		62	0.05	6			8	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0		0	0.00	2			3	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.480					0.213
Emissions:													
VOC	VOC lbs/day							11.51					5.10
	VOC tons/yr							2.10					0.93
Ammonia	Ammonia lbs/hr							0.00					0.02
	Ammonia lbs/yr							0.00					133.88
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

		Post-Project Count Contingency Factor:		25%					25%				
Unit				Incineration System					SOx Scrubbing System				
Process/System				P15S03					P15S04				
Existing Process/System Descriptor				Incineration System					SOx Scrubbing System Serving Asphalt Blowing Plant				
Description of Modification				Modified to be part of Unit B H2S recovery					No change				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Amine/Amine Regen					H2S Recovery
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.04					0.00
	n-Hexane lbs/yr							374.43					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.01					0.01
	Hydrogen Sulfide lbs/yr							119.35					98.13
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				0%					0%				
Unit				Equipment removed					Equipment removed				
Process/System				P16S01					P16S02				
Existing Process/System Descriptor				Reformate Splitter					Bensat Unit				
Description of Modification				Equipment removed					Equipment removed				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service						Removed					Removed		
Component Counts:													
Valves	Bellows Sealed Valves	0	0	443		443	0	0.00	278		278	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	56		56	0	0.00	54		54	0	0.00
Program)	Light Liquid	300	3.5E-04	187		187	0	0.00	122		122	0	0.00
	Heavy Liquid	100	1.6E-04	0		0	0	0.00	0		0	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	4		4	0	0.00	5		5	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0		0	0	0.00	0		0	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0		0	0	0.00	0		0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	502		502	0	0.00	338		338	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0		0	0	0.00	0		0	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	2,743		2743	0	0.00	897		897	0	0.00
	Heavy Liquid	100	1.0E-04	0		0	0	0.00	0		0	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	18		18	0	0.00	3		3	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0		0	0	0.00	5		5	0	0.00
Other	GV/Light Liquid	300	7.5E-04	34		34	0	0.00	17		17	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0		0	0	0.00	0		0	0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.000					0.000
Emissions:													
VOC	VOC lbs/day							0.00					0.00
	VOC tons/yr							0.00					0.00
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				0%				0%
Unit								Equipment removed				Equipment removed
Process/System								P16S01				P16S02
Existing Process/System Descriptor								Reformate Splitter				Bensat Unit
Description of Modification								Equipment removed				Equipment removed
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Removed					Removed
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							0.00					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Renewable Fuels First Stage					Renewable Fuels Second Stage				
Process/System				P18S1					P18S2				
Existing Process/System Descriptor				Renewable Fuels First Stage					Renewable Fuels Second Stage				
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service							RFUA					RFUA	
Component Counts:													
Valves	Bellows Sealed Valves	0	0	83	316		499	0.00	185			232	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	90	429		649	0.23	56			70	0.02
Program)	Light Liquid	300	3.5E-04	260	124		480	0.17	150			188	0.07
	Heavy Liquid	100	1.6E-04	165	658		1029	0.16	240			300	0.05
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0			0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	7		7	0.04	0			0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	6	0		6	0.01	2			2	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	4	15		19	0.04	10			10	0.02
Compressors	Gas / Vapor	500	1.0E-03	1	5		6	0.01	1			1	0.00
Flanges	GV/Light Liquid	300	5.6E-04	348	1039		1734	0.96	339			424	0.24
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	105	819		1155	0.30	322			403	0.10
Connectors	GV/Light Liquid	300	2.2E-04	862	1475		2922	0.66	1,505			1882	0.42
	Heavy Liquid	100	1.0E-04	516	1258		2218	0.22	919			1149	0.11
Pressure Relief Valves	Gas / Vapor	0	0	6	45		64	0.00	4			5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0			0	0.00
Other	GV/Light Liquid	300	7.5E-04	14	22		45	0.03	17			22	0.02
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	11	18		37	0.01	28			35	0.01
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								2.838					1.068
Emissions:													
VOC	VOC lbs/day							68.11					25.64
	VOC tons/yr							12.43					4.68
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							9.94					3.74
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit							Renewable Fuels First Stage					Renewable Fuels Second Stage	
Process/System							P18S1					P18S2	
Existing Process/System Descriptor							Renewable Fuels First Stage					Renewable Fuels Second Stage	
Description of Modification													
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								RFUA					RFUA
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.28					0.11
	n-Hexane lbs/yr							2,486.17					935.74
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							2.49					0.94
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.01					0.00
	Hydrogen Sulfide lbs/yr							47.24					17.78
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				100%				0%					
Unit				Renewable Fuels Unit B					Pretreat Unit				
Process/System				New					New				
Existing Process/System Descriptor				New					New				
Description of Modification				New unit					Zero VOC				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service				RFUB					Pretreat				
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	256	512	0.00		0	0	0	0	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	449	898	0.32		0	0	0	0	0.00
Program)	Light Liquid	300	3.5E-04	0	108	216	0.08		0	0	0	0	0.00
	Heavy Liquid	100	1.6E-04	0	780	1560	0.24		0	1043	1043	0	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0	0	0.00		0	0	0	0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	6	6	0.03		0	0	0	0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0	0	0.00		0	0	0	0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	16	16	0.03		0	38	38	0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	4	4	0.00		0	0	0	0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	989	1978	1.10		0	0	0	0	0.00
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	783	1566	0.40		0	2285	2285	0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	1615	3230	0.72		0	0	0	0	0.00
	Heavy Liquid	100	1.0E-04	0	1474	2948	0.29		0	1639	1639	0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	22	44	0.00		0	27	27	0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0	0	0.00		0	16	16	0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	14	28	0.02		0	0	0	0	0.00
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	17	34	0.01		0	127	127	0	0.00
Operating Time:													
Hours per Day							24						24
Days per Year							365						365
Emission Factors:													
VOC EF (lbs/hr)							3.260						0.000
Emissions:													
VOC	VOC lbs/day						78.23						0.00
	VOC tons/yr						14.28						0.00
Ammonia	Ammonia lbs/hr						0.00						0.00
	Ammonia lbs/yr						11.42						0.00
Benzene	Benzene lbs/hr						0.00						0.00
	Benzene lbs/yr						0.00						0.00
Cyclohexane	Cyclohexane lbs/hr						0.00						0.00
	Cyclohexane lbs/yr						0.00						0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr						0.00						0.00
	1,2-Dichlorobenzene lbs/yr						0.00						0.00
Ethylbenzene	Ethylbenzene lbs/hr						0.00						0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			100%				0%
Unit				Renewable Fuels Unit B					Pretreat Unit		
Process/System				New					New		
Existing Process/System Descriptor				New					New		
Description of Modification				New unit					Zero VOC		
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service				RFUB					Pretreat				
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.33					0.00
	n-Hexane lbs/yr							2,855.51					0.00
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							2.86					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.01					0.00
	Hydrogen Sulfide lbs/yr							54.25					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.00					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Pretreat Unit Wastewater Treatment					Spent Clay Treating System				
Process/System				New					New				
Existing Process/System Descriptor				New					New				
Description of Modification				New unit					New unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					Renewable Naphtha
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	0		0	0.00	0	72		90	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	0		0	0.00	0	270		338	0.12
Program)	Light Liquid	300	3.5E-04	0	0		0	0.00	0	96		120	0.04
	Heavy Liquid	100	1.6E-04	0	72		90	0.01	0	765		957	0.15
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0	8		8	0.02
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0		0	0.00	0	23		23	0.05
Compressors	Gas / Vapor	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	0		0	0.00	0	90		113	0.06
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	80		100	0.03	0	234		293	0.08
Connectors	GV/Light Liquid	300	2.2E-04	0	0		0	0.00	0	1110		1388	0.31
	Heavy Liquid	100	1.0E-04	0	104		130	0.01	0	738		923	0.09
Pressure Relief Valves	Gas / Vapor	0	0	0	0		0	0.00	0	0		0	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	2		3	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	0		0	0.00	0	6		8	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0		0	0.00	0	54		68	0.03
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.056					0.945
Emissions:													
VOC	VOC lbs/day							1.34					22.68
	VOC tons/yr							0.24					4.14
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.04					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							0.00					0.00
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

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Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%
Unit				Pretreat Unit Wastewater Treatment					Spent Clay Treating System				
Process/System				New					New				
Existing Process/System Descriptor				New					New				
Description of Modification				New unit					New unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Wastewater Treatment					Renewable Naphtha
	Ethylbenzene lbs/yr							0.06					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.03
	n-Hexane lbs/yr							0.18					248.33
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							0.00					0.00
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.01					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.03					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.13					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.38					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.38					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							0.53					0.00

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

Post-Project Count Contingency Factor:				25%					25%				
Unit				Hydrogen Generation Unit					Hydrogen Reformer Heater				
Process/System				New					New				
Existing Process/System Descriptor				New					New				
Description of Modification				New unit					New unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Hydrogen Generation					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	253		317	0.00	0	31		39	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	271		339	0.12	0	216		270	0.10
Program)	Light Liquid	300	3.5E-04	0	0		0	0.00	0	0		0	0.00
	Heavy Liquid	100	1.6E-04	0	29		37	0.01	0	1		2	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	0		0	0.00	0	0		0	0.00
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	2		2	0.00	0	0		0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	4		4	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	429		537	0.30	0	442		553	0.31
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	0		0	0.00	0	0		0	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	327		409	0.09	0	1003		1254	0.28
	Heavy Liquid	100	1.0E-04	0	0		0	0.00	0	0		0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	25		32	0.00	0	1		2	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	836		1045	0.78	0	690		863	0.65
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0		0	0.00	0	0		0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								1.306					1.330
Emissions:													
VOC	VOC lbs/day							31.33					31.92
	VOC tons/yr							5.72					5.83
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							2.29					2.33
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:				25%					25%	
Unit								Hydrogen Generation Unit					Hydrogen Reformer Heater	
Process/System								New					New	
Existing Process/System Descriptor								New					New	
Description of Modification								New unit					New unit	
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	
Service								Hydrogen Generation					Renewable Fuel Gas	
	Ethylbenzene lbs/yr							0.00						0.00
Hexane (n)	n-Hexane lbs/hr							0.01						0.01
	n-Hexane lbs/yr							61.76						62.91
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00						0.00
	Hydrogen Chloride lbs/yr							0.00						0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00						0.00
	Hydrogen Sulfide lbs/yr							2.29						2.33
Isoprene	Isoprene lbs/hr							0.00						0.00
	Isoprene lbs/yr							0.00						0.00
Cumene	Isopropyl benzene lbs/hr							0.00						0.00
	Isopropyl benzene lbs/yr							0.00						0.00
Methyl Alcohol	Methanol lbs/hr							0.00						0.00
	Methanol lbs/yr							0.00						0.00
Naphthalene	Naphthalene lbs/hr							0.00						0.00
	Naphthalene lbs/yr							0.00						0.00
Propylene	Propylene lbs/hr							0.03						0.00
	Propylene lbs/yr							242.47						0.00
Toluene	Toluene lbs/hr							0.00						0.00
	Toluene lbs/yr							0.00						0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00						0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00						0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00						0.00
	2,2,4-Trimethylpentane lbs/yr							0.00						0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00						0.00
	Xylenes lbs/yr							4.57						4.66

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

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Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:			25%				25%	
Unit				New Flare Vapor Recovery System					New Flare System			
Process/System				New					New			
Existing Process/System Descriptor				New					New			
Description of Modification				New unit					New unit			
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
Component Counts:													
Valves	Bellows Sealed Valves	0	0	0	154		193	0.00	0	39		49	0.00
(SCAQMD Approved I&M	Gas / Vapor	300	3.5E-04	0	419		524	0.19	0	187		234	0.08
Program)	Light Liquid	300	3.5E-04	0	4		5	0.00	0	11		14	0.00
	Heavy Liquid	100	1.6E-04	0	0		0	0.00	0	1		2	0.00
Pumps, Sealless Type	Light Liquid	0	0.0E+00	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	0	6		6	0.03	0	3		3	0.02
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	100	2.0E-03	0	0		0	0.00	0	0		0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03	0	0		0	0.00	0	0		0	0.00
Compressors	Gas / Vapor	500	1.0E-03	0	2		2	0.00	0	0		0	0.00
Flanges	GV/Light Liquid	300	5.6E-04	0	310		388	0.22	0	117		147	0.08
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04	0	0		0	0.00	0	2		3	0.00
Connectors	GV/Light Liquid	300	2.2E-04	0	1425		1782	0.40	0	1016		1270	0.28
	Heavy Liquid	100	1.0E-04	0	0		0	0.00	0	1		2	0.00
Pressure Relief Valves	Gas / Vapor	0	0	0	3		4	0.00	0	1		2	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03	0	0		0	0.00	0	0		0	0.00
Other	GV/Light Liquid	300	7.5E-04	0	33		42	0.03	0	18		23	0.02
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04	0	0		0	0.00	0	0		0	0.00
Operating Time:													
Hours per Day								24					24
Days per Year								365					365
Emission Factors:													
VOC EF (lbs/hr)								0.869					0.489
Emissions:													
VOC	VOC lbs/day							20.84					11.74
	VOC tons/yr							3.80					2.14
Ammonia	Ammonia lbs/hr							0.00					0.00
	Ammonia lbs/yr							0.00					0.00
Benzene	Benzene lbs/hr							0.00					0.00
	Benzene lbs/yr							0.00					0.00
Cyclohexane	Cyclohexane lbs/hr							0.00					0.00
	Cyclohexane lbs/yr							0.00					0.00
1,2-Dichlorobenzene	1,2-Dichlorobenzene lbs/hr							0.00					0.00
	1,2-Dichlorobenzene lbs/yr							1.52					0.86
Ethylbenzene	Ethylbenzene lbs/hr							0.00					0.00

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Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-9: Project Potential Fugitive Component Emissions Calculations

				Post-Project Count Contingency Factor:	25%				25%				
Unit					New Flare Vapor Recovery System				New Flare System				
Process/System					New				New				
Existing Process/System Descriptor					New				New				
Description of Modification					New unit				New unit				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)	Pre-Project Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								Renewable Fuel Gas					Renewable Fuel Gas
	Ethylbenzene lbs/yr							0.00					0.00
Hexane (n)	n-Hexane lbs/hr							0.00					0.00
	n-Hexane lbs/yr							41.08					23.13
Hydrogen Chloride	Hydrogen Chloride lbs/hr							0.00					0.00
	Hydrogen Chloride lbs/yr							0.00					0.00
Hydrogen Sulfide	Hydrogen Sulfide lbs/hr							0.00					0.00
	Hydrogen Sulfide lbs/yr							1.52					0.86
Isoprene	Isoprene lbs/hr							0.00					0.00
	Isoprene lbs/yr							0.00					0.00
Cumene	Isopropyl benzene lbs/hr							0.00					0.00
	Isopropyl benzene lbs/yr							0.00					0.00
Methyl Alcohol	Methanol lbs/hr							0.00					0.00
	Methanol lbs/yr							0.00					0.00
Naphthalene	Naphthalene lbs/hr							0.00					0.00
	Naphthalene lbs/yr							0.00					0.00
Propylene	Propylene lbs/hr							0.00					0.00
	Propylene lbs/yr							0.00					0.00
Toluene	Toluene lbs/hr							0.00					0.00
	Toluene lbs/yr							0.00					0.00
Trimethylbenzene (1,2,4)	1,2,4-Trimethylbenzene lbs/hr							0.00					0.00
	1,2,4-Trimethylbenzene lbs/yr							0.00					0.00
Isooctane	2,2,4-Trimethylpentane lbs/hr							0.00					0.00
	2,2,4-Trimethylpentane lbs/yr							0.00					0.00
Xylenes (mixed isomers)	Xylenes lbs/hr							0.00					0.00
	Xylenes lbs/yr							3.04					1.71

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Table A-10: Project Potential Ammonia Service Fugitive Component Emissions Calculations (one existing and two new ammonia storage tanks)

Unit				Aqueous NH3 Transfer and Storage				
Device Number				P13S04				
Description of Modification				Add two new ammonia tanks and associated piping connections				
		Leak Rate for Correlation Equation (SV) (ppmv)	Leak Rate (lbs/hr/ count)	Baseline Count	Number Added	Number Removed	Post-Project Count	Post-Project Potential Emissions (lbs/hr)
Service								19% Aqueous NH3
Component Counts:								
Valves	Bellows Sealed Valves	0	0				0	0.00
(SCAQMD Approved I&M	Gas / Vapor	500	5.2E-04	6			15	0.01
Program)	Light Liquid	500	5.2E-04	334			835	0.43
	Heavy Liquid	100	1.6E-04				0	0.00
Pumps, Single Mechanical Seals	Light Liquid	500	5.3E-03	2			5	0.03
Pumps, Double Mechanical Seals or Equivalent	Light Liquid	500	5.3E-03				0	0.00
Pumps, Single Mechanical Seals	Heavy Liquid	100	2.0E-03				0	0.00
Compressors	Gas / Vapor	500	1.0E-03				0	0.00
Flanges	GV/Light Liquid	500	8.0E-04	272			680	0.54
(ANSI 16.5-1988)	Heavy Liquid	100	2.6E-04				0	0.00
Connectors	GV/Light Liquid	500	3.3E-04	964			2410	0.79
	Heavy Liquid	100	1.0E-04				0	0.00
Pressure Relief Valves	Gas / Vapor	0	0	2			5	0.00
Process Drains with P-Trap or Seal Pot	Light Liquid	500	1.0E-03				0	0.00
Other	GV/Light Liquid	500	1.0E-03	4			10	0.01
(including fittings, hatches, sight glasses, and meters)	Heavy Liquid	100	3.7E-04				0	0.00
Operating Time:								
Hours per Day	(hrs/day)							24
Days per Year	(days/yr)							365
Emission Factors:								
Ammonia weight fraction								19%
Emissions:								
Ammonia	Ammonia lbs/hr							0.344
	Ammonia lbs/yr							3,009.25

CAPCOA Correlation Equations

Component Type	Correlation Curve (lb/hr)
Bellows Sealed Valve	0
Valve	5.00E-06 x SV^(0.747)
Pump	1.12E-04 x SV^(0.622)
Compressor	1.92E-05 x SV^(0.642)
Flange	9.92E-06 x SV^(0.706)
Connector	3.37E-06 x SV^(0.736)
Pressure Relief Valve	0
Process Drain	1.92E-06 x SV^(0.642)
Other	1.92E-06 x SV^(0.642)

Notes:

[1] Light liquid and gas/liquid streams: Liquid or gas/liquid stream with a vapor pressure greater than that of kerosene (>0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.

[2] Heavy liquid streams: Streams with a vapor pressure equal to or less than that of kerosene (≤0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.

[3] Ammonia emissions are calculated by multiplying the leak rate by the ammonia weight fraction of 19%.

Table A-10a: Project Potential Ammonia Service Storage Tank Emissions Calculations

Parameter		Existing Onspec Ammonia Tank	New Offspec Ammonia Tank D-xxx	New SMR Ammonia Tank	AP-42 Chapter 7.1 Equation/Notes
Shell Diameter (ft)	D	8	8	5	correcting dimensions for D-069
Shell Length (ft)	L	24	24	9.5	
Tank Capacity (gal)		10,000	10,000	1,600	
Annual Net Throughput (bbl/yr)	Q	20,000	20,000	2,500	**Onspec and Offspec Tanks:** 2.4 gpm total for both tanks, scaled up 33% to 40,000 bbl/yr, divided evenly between the two tanks for PTE purposes **H-151 SCR Tank:** 62.13 lbs/hr (54.67 lbs/ft^3), scaled up 41% to 2,500 bbl/yr.
Normal Operating Pressure (psig)	PI	17	17	50	
Breather Vent Pressure Setting (psig)	PBP	25	25	100	Onspec and offspec tank PSV set at 25 psig; SMR tank PSV set at 100 psig
Liquid Bulk Temperature (R)	TB	559.67	559.67	559.67	(100 F)
Effective Diameter (ft)	DE	15.64	15.64	7.78	Eq 1-14
Effective Height (ft)	HE	6.28	6.28	3.93	Eq 1-15
Atmospheric Pressure (psia)	PA	14.68	14.68	14.68	Tbl 7.1-7 (Long Beach, CA)
Avg Daily Maximum Ambient Temperature (R)	TAX	532.67	532.67	532.67	Tbl 7.1-7 (Long Beach, CA)
Avg Daily Minimum Ambinet Temperature (R)	TAN	515.67	515.67	515.67	Tbl 7.1-7 (Long Beach, CA)
Avg Daily Total Insolation Factor (Btu/(ft^2 day))	I	1,598	1,598	1,598	Tbl 7.1-7 (Long Beach, CA)
Tank Shell/Roof Surface Solar Absortance	α	0.25	0.25	0.25	Tbl 7.1-6 (white tank; avg condition)
Net Working Loss Throughput (ft^3/yr)	VQ	112,280.00	112,280.00	14,035.00	Eq 1-39
Working Loss Turnover Factor	KN	0.2511	0.2511	0.3315	Eq 1-35
Number of Turnovers per Year	N	355.51	355.51	182.02	Eq 1-36
Annual Sum of Increases in Liquid Level (ft)	HQI	2,233.74	2,233.74	714.80	Eq 1-37
Maximum Liquid Height (ft)	HLX	6.28	6.28	3.93	Eq 1-37
Minimum Liquid Height (ft)	HLN	0	0	0	Eq 1-37
Working Loss Product Factor	KP	1	1	1	Eq 1-35
Vapor Density (lb/ft^3)	WV	0.02743	0.02743	0.02747	Eq 1-22
Vapor Molecular Weight	MV	17.03	17.03	17.03	(ammonia)
Vapor Presure at Avg Liquid Surface Temperature (psia)	PVA	9.3	9.3	9.3	(vapor pressure for 19% aqueous ammonia at 100 F)
Avg Liquid Surface Temperature (R)	TLA	548.90	548.90	548.46	Eq 1-27
Avg Daily Ambient Temperature (R)	TAA	524.17	524.17	524.17	Eq 1-30
Avg Vapor Temperature (R)	TV	538.13	538.13	537.26	Eq 1-32
Vent Setting Correction Factor	KB	3.8476	3.8476	1.7634	Eq 1-40 & 1-41
Working Loss (lbs/yr)	LW	2,974.53	2,974.53	225.37	Eq 1-35
Control Efficiency		99%	99%	99%	99% control efficiency for Flare Gas Recovery
Controlled Ammonia Emissions (lbs/yr)		29.75	29.75	2.25	Assumes working losses are 100% ammonia
Controlled Ammonia Emissions (lbs/hr)		0.0034	0.0034	0.0003	Operation 24 hrs/day, 365 days/yr

Notes:

[1] The ammonia tanks are pressure vessels with pressure relief valves set at greater than 15 psig. Emissions vented from the pressure relief valves to the flare gas recovery system were estimated using the methogology in AP-42 Chapter 7.1 (June 2020 revision). Although AP-42 Chapter 7.1 indicates that the equations are intended for tanks operating at pressures up to 15 psig, the AP-42 methodology was used as a best estimate of emissions.

[2] For simplicity, ammonia tank and fugitive component emissions modeling was done as a single area source at the location of the existing onspec ammonia tank and new offspec ammonia tank, which is the location closest to offsite receptors.

Table A-11: Project Potential Wastewater Treatment System Emissions Calculations

						Operating Time		Emission Factors		Emissions											
										VOC		Benzene		Cyclohexane		Ethylbenzene		Hexane (n)		Hydrogen Sulfide	
Unit	SCAQMD Device Number	Description of Modification	Flow Rate (gpm)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	VOC EF (lbs/ Mgal)	Toxic Profile	VOC lbs/day	VOC tons/yr	Benzene lbs/hr	Benzene lbs/yr	Cyclohexane lbs/hr	Cyclohexane lbs/yr	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Hydrogen Sulfide lbs/hr	Hydrogen Sulfide lbs/yr
Existing WWT System	Various	No change	733.75	None	None	24	365	0.2 [1]	Recovered Oil	211.32	38.57	0.01	36.37	0.01	43.08	0.00	5.91	0.04	286.93	0.00	4.72
New Pretreat WWT System	New	New installation	65	None	None	24	365	0.2 [1]	Recovered Oil	18.72	3.42	0.00	3.22	0.00	3.82	0.00	0.52	0.00	25.42	0.00	0.42

Notes:

[1] Taken from AP-42 Tbl 5.1-3 for covered oil/water separators.

[2] The flow rate for the existing wastewater treatment system is 587 gpm, increased by an additional 25% safety factor.

[3] The new Pretreat Unit will generate approximately 52 gpm of waste water; a 25% safety factor was applied for the emissions calculations, resulting in a flow rate of 65 gpm.

[4] Toxic emissions are calculated by multiplying VOC emissions by the vapor weight fractions in the toxic speciation profile for recovered oil.

Table A-11: Project Potential Wastewater Treatment System Emissions Calculations

						Emissions															
						Isoprene		Cumene		Methyl Alcohol		Naphthalene		Toluene		Trimethylbenzene (1,2,4)		Isooctane		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Flow Rate (gpm)	Control Device(s)	Control Efficiency	Isoprene lbs/hr	Isoprene lbs/yr	Isopropyl benzene lbs/hr	Isopropyl benzene lbs/yr	Methanol lbs/hr	Methanol lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr	Toluene lbs/hr	Toluene lbs/yr	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	2,2,4-Trimethylpentane lbs/hr	2,2,4-Trimethylpentane lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
Existing WWT System	Various	No change	733.75	None	None	0.00	2.94	0.00	0.50	0.00	1.36	0.00	0.07	0.01	37.63	0.00	7.29	0.03	191.54	0.01	42.56
New Pretreat WWT System	New	New installation	65	None	None	0.00	0.26	0.00	0.04	0.00	0.12	0.00	0.01	0.00	3.33	0.00	0.65	0.00	16.97	0.00	3.77

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-12: Project Potential Emissions Calculations for Process Vents Routed to the H-401/402 Incinerators

						Operating Time		Emission Factors			Emissions					
											VOC		CO2	Benzene		Cyclohexane	
Unit	SCAQMD Device Number	Description of Modification	Vent Rate (Mscfd)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	VOC EF (mol%)		Toxic Profile	VOC lbs/day	VOC tons/yr	CO2 MT/yr	Benzene lbs/hr	Benzene lbs/yr	Cyclohexane lbs/hr	Cyclohexane lbs/yr
Process Venting to H-401/402	New	New installation	1,732.0	H-401/ H-402	99%	24	365	0.3282	[1]	See Note [1]	7.96	1.45	17,651	0.00	12.23	0.00	36.68

Notes:

[1] Vent stream flow rates and composition were taken from "PDP for New Burn and Scrub System: Design Basis", Revision 1, Trimeric Corporation, 10/28/20.

Stream		Amine Acid Gas	Sour Water Stripper Gas	Waste Water Stripper Gas	Caustic Tank Gas	Wemco-Cistern Gas	SVE Gas	Vent Stream Total
Vent Flow Rate (Mscfd)		937.6	29.3	43.2	13	144	564.9	1,732.0
Vent Stream Composition	MW (lbs/lbmol)	mol%	mol%	mol%	mol%	mol%	mol%	mol%
CO2	44.01	96.3104	53.9692	0.04	0.04		0.04	53.06
Ethylene	28.05	0.068	0.1267					0.0390
Propane	44.096	0.3421	0.5665		0.41			0.1979
Isobutane	58.122	0.013	0.06		0.02		0.0005	0.0084
n-Butane	58.122	0.0077	0.0555		0.01			0.0052
Isopentane	72.149	0.0068	0.2391		0.01			0.0078
n-Pentane	72.149	0.0055	0.0875		0.07			0.0050
Hexane (n)	86.175	0.0055	0.2879	0.2	0.021	0.2	0.00547	0.0314
Cyclohexane	84.16			0.0057		0.0057	0.00613	0.0026
n-Heptane	100.21			0.11		0.11	0.00286	0.0128
n-Octane	114.23			0.044		0.044		0.0048
n-Nonane	128.2			0.0046		0.0046		0.0005
Benzene	78.112	0.0001	0.0032				0.00255	0.0009
Toluene	92.138	0.0048	0.1679	0.003		0.003	0.00053	0.0059
Ethylbenzene	106.167	0.0003	0.0026				0.00012	0.0002
Xylenes (mixed isomers)	106.167	0.0014	0.0069				0.00157	0.0014
1,3,5-Trimethylbenzene	120.19						1.64E-06	0.0000
1,2,4-Trimethylbenzene	120.19						2.75E-06	0.0000
Naphthalene	128.17						1.17E-06	0.0000
Methyl mercaptan	48.107	0.0009	0.0019	0.000836	0.0001	0.00084		0.0006
Ethyl mercaptan	62.134	0.0031	0.0093	0.000255		0.00026		0.0019
Isopropyl mercaptan	76.16	0.0012	0.0102					0.0008
n-Propyl mercaptan	76.161	0.0015	0.0097		0.002			0.0010
i-Butyl mercaptan	90.19	0.0002	0.0019					0.0001
VOC Total	53.13	0.4621	1.6368	0.3684	0.5431	0.3684	0.0197	0.3282

[2] The vent streams will be vented to either the H-401 or H-402 incinerator. Each incinerator has a VOC/ammonia control efficiency of at least 99%.

[3] All H2S and carbonyl sulfide are assumed to be oxidized in the H-401/402 incinerators and evaluated as SOx emissions from H-401/402.

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-12: Project Potential Emissions Calculations for Process Vents Routed to the H-401/402 Incinerators

						Operating Time		Emissions									
								Ethylbenzene		Ethylene		Hexane (n)		Naphthalene		Toluene	
Unit	SCAQMD Device Number	Description of Modification	Vent Rate (Mscfd)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	Ethylbenzene lbs/hr	Ethylbenzene lbs/yr	Ethylene lbs/hr	Ethylene lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr	Naphthalene lbs/hr	Naphthalene lbs/yr	Toluene lbs/hr	Toluene lbs/yr
Process Venting to H-401/402	New	New installation	1,732.0	H-401/ H-402	99%	24	365	0.00	4.34	0.02	182.07	0.05	450.96	0.00	0.01	0.01	91.13

Notes:

[1] Vent stream flow rates and composition were taken from "PDP for New Burn and Scrub System: Design Basis", Revision 1, Trimeric Corporation, 10/28/20.

Stream		Amine Acid Gas	Sour Water Stripper Gas	Waste Water Stripper Gas	Caustic Tank Gas	Wemco-Cistern Gas	SVE Gas	Vent Stream Total
Vent Flow Rate (Mscfd)		937.6	29.3	43.2	13	144	564.9	1,732.0
Vent Stream Composition	MW (lbs/lbmol)	mol%	mol%	mol%	mol%	mol%	mol%	mol%
CO2	44.01	96.3104	53.9692	0.04	0.04		0.04	53.06
Ethylene	28.05	0.068	0.1267					0.0390
Propane	44.096	0.3421	0.5665		0.41			0.1979
Isobutane	58.122	0.013	0.06		0.02		0.0005	0.0084
n-Butane	58.122	0.0077	0.0555		0.01			0.0052
Isopentane	72.149	0.0068	0.2391		0.01			0.0078
n-Pentane	72.149	0.0055	0.0875		0.07			0.0050
Hexane (n)	86.175	0.0055	0.2879	0.2	0.021	0.2	0.00547	0.0314
Cyclohexane	84.16			0.0057		0.0057	0.00613	0.0026
n-Heptane	100.21			0.11		0.11	0.00286	0.0128
n-Octane	114.23			0.044		0.044		0.0048
n-Nonane	128.2			0.0046		0.0046		0.0005
Benzene	78.112	0.0001	0.0032				0.00255	0.0009
Toluene	92.138	0.0048	0.1679	0.003		0.003	0.00053	0.0059
Ethylbenzene	106.167	0.0003	0.0026				0.00012	0.0002
Xylenes (mixed isomers)	106.167	0.0014	0.0069				0.00157	0.0014
1,3,5-Trimethylbenzene	120.19						1.64E-06	0.0000
1,2,4-Trimethylbenzene	120.19						2.75E-06	0.0000
Naphthalene	128.17						1.17E-06	0.0000
Methyl mercaptan	48.107	0.0009	0.0019	0.000836	0.0001	0.00084		0.0006
Ethyl mercaptan	62.134	0.0031	0.0093	0.000255		0.00026		0.0019
Isopropyl mercaptan	76.16	0.0012	0.0102					0.0008
n-Propyl mercaptan	76.161	0.0015	0.0097		0.002			0.0010
i-Butyl mercaptan	90.19	0.0002	0.0019					0.0001
VOC Total	53.13	0.4621	1.6368	0.3684	0.5431	0.3684	0.0197	0.3282

Table A-12: Project Potential Emissions Calculations for Process Vents Routed to the H-401/402 Incinerators

						Operating Time		Emissions					
								1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		Xylenes (mixed isomers)	
Unit	SCAQMD Device Number	Description of Modification	Vent Rate (Mscfd)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	1,2,4-Trimethylbenzene lbs/hr	1,2,4-Trimethylbenzene lbs/yr	1,3,5-Trimethylbenzene lbs/hr	1,3,5-Trimethylbenzene lbs/yr	Xylenes lbs/hr	Xylenes lbs/yr
Process Venting to H-401/402	New	New installation	1,732.0	H-401/ H-402	99%	24	365	0.00	0.02	0.00	0.01	0.00	24.53

Notes:

[1] Vent stream flow rates and composition were taken from "PDP for New Burn and Scrub System: Design Basis", Revision 1, Trimeric Corporation, 10/28/20.

Stream		Amine Acid Gas	Sour Water Stripper Gas	Waste Water Stripper Gas	Caustic Tank Gas	Wemco-Cistern Gas	SVE Gas	Vent Stream Total
Vent Flow Rate (Mscfd)		937.6	29.3	43.2	13	144	564.9	1,732.0
Vent Stream Composition	MW (lbs/lbmol)	mol%	mol%	mol%	mol%	mol%	mol%	mol%
CO2	44.01	96.3104	53.9692	0.04	0.04		0.04	53.06
Ethylene	28.05	0.068	0.1267					0.0390
Propane	44.096	0.3421	0.5665		0.41			0.1979
Isobutane	58.122	0.013	0.06		0.02		0.0005	0.0084
n-Butane	58.122	0.0077	0.0555		0.01			0.0052
Isopentane	72.149	0.0068	0.2391		0.01			0.0078
n-Pentane	72.149	0.0055	0.0875		0.07			0.0050
Hexane (n)	86.175	0.0055	0.2879	0.2	0.021	0.2	0.00547	0.0314
Cyclohexane	84.16			0.0057		0.0057	0.00613	0.0026
n-Heptane	100.21			0.11		0.11	0.00286	0.0128
n-Octane	114.23			0.044		0.044		0.0048
n-Nonane	128.2			0.0046		0.0046		0.0005
Benzene	78.112	0.0001	0.0032				0.00255	0.0009
Toluene	92.138	0.0048	0.1679	0.003		0.003	0.00053	0.0059
Ethylbenzene	106.167	0.0003	0.0026				0.00012	0.0002
Xylenes (mixed isomers)	106.167	0.0014	0.0069				0.00157	0.0014
1,3,5-Trimethylbenzene	120.19						1.64E-06	0.0000
1,2,4-Trimethylbenzene	120.19						2.75E-06	0.0000
Naphthalene	128.17						1.17E-06	0.0000
Methyl mercaptan	48.107	0.0009	0.0019	0.000836	0.0001	0.00084		0.0006
Ethyl mercaptan	62.134	0.0031	0.0093	0.000255		0.00026		0.0019
Isopropyl mercaptan	76.16	0.0012	0.0102					0.0008
n-Propyl mercaptan	76.161	0.0015	0.0097		0.002			0.0010
i-Butyl mercaptan	90.19	0.0002	0.0019					0.0001
VOC Total	53.13	0.4621	1.6368	0.3684	0.5431	0.3684	0.0197	0.3282

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Attachment A: Emissions Calculations

Table A-13: Project Potential Emissions Calculations for Process Vents Routed to the H-907/908 Incinerators

						Operating Time		Emission Factors		Emissions								Emissions	
										VOC		CO2	Benzene		Cyclohexane		Hexane (n)	
Unit	SCAQMD Device Number	Description of Modification	Vent Rate (MMscfd)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year	VOC EF (mol%)	Toxic Profile	VOC lbs/day	VOC tons/yr	CO2 MT/yr	Benzene lbs/hr	Benzene lbs/yr	Cyclohexane lbs/hr	Cyclohexane lbs/yr	n-Hexane lbs/hr	n-Hexane lbs/yr
Process Venting to H-907/908	New	New installation	8.613	H-907	99%	24	365	0.7843 [1]	See Note [1]	92.53	16.89	79,647	0.00	5.95	0.00	8.16	0.59	5,199.00

Notes:

[1] H-907/908 process vent streams are shown below. Several truck/rail load racks are also vented to H-907/908, but these emissions are accounted for at each rack.

Stream		H2S Recovery Offgas	Pretreat Unit Vacuum Vent	API Purge Gas	Oil Recovery/ Bleaching Clay Treatment Vent (500 ppmw naphtha)	Oil Recovery/ Bleaching Clay Treatment Vent (1 wt% naphtha)	SWS Plus Feed Degasser	Vent Stream Total
Vent Flow Rate (MMscfd)		4.36	3.38	0.072	0.72	0.072	0.009	8.613
Vent Stream Composition	MW (lbs/lbmol)	mol%	mol%	mol%	mol%	mol%	mol%	mol%
CO2	44.01	95.11					4.00	48.15
Propane	44.096	1.1					0.469	0.5573
Isobutane	58.122	0.15						0.0759
n-Butane	58.122	0.03						0.0152
Isopentane	72.149	0.08						0.0405
n-Pentane	72.149	0.04						0.0202
Hexane (n)	86.175	0.02	0.103	0.79	0.062	1.249		0.0728
Heptane (n)	100.21			0.22				0.0018
Octane (n)	114.23			0.026				0.0002
Benzene	78.112			0.011				0.0001
Cyclohexane	84.16			0.014				0.0001
Toluene	92.138			0.008				0.0001
VOC Total	51.97	1.42	0.103	1.069	0.062	1.249	0.469	0.7843

[3] The vent streams will be vented to the H-907 incinerator, which has a VOC control efficiency of at least 99%.
[4] All H2S is assumed to be oxidized in the H-907 incinerator and evaluated as SOx emissions from H-907/908.
[5] The Pretreat Vacuum Vent hexane mol% was estimated as 0.0275 x the mol% of hexane in green naphtha (calculated as 0.0275 x 3 wt% hexane x 107.6 green Naphtha MW / 86.175 hexane MW).
[6] Amine Acid Gas, and Sour Water Stripper Gas streams (not shown here) vent to H-907 as a backup when H-401 is down.

AltAir Paramount Refinery -
Renewable Fuels Project
Attachment A: Emissions Calculations

Table A-13: Project Potential Emissions Calculations for Process Vents Routed to the H-907/908 Incinerators

						Operating Time			Toluene	
Unit	SCAQMD Device Number	Description of Modification	Vent Rate (MMscfd)	Control Device(s)	Control Efficiency	Hours per Day	Days per Year		Toluene lbs/hr	Toluene lbs/yr
Process Venting to H-907/908	New	New installation	8.613	H-907	99%	24	365		0.00	5.11

Notes:

[1] H-907/908 process vent streams are shown below. Several truck/rail load racks are also vented to H-907/908, but

Stream		H2S Recovery Offgas	Pretreat Unit Vacuum Vent	API Purge Gas	Oil Recovery/ Bleaching Clay Treatment Vent (500 ppmw naphtha)	Oil Recovery/ Bleaching Clay Treatment Vent (1 wt% naphtha)	SWS Plus Feed Degasser	Vent Stream Total
Vent Flow Rate (MMscfd)		4.36	3.38	0.072	0.72	0.072	0.009	8.613
Vent Stream Composition	MW (lbs/lbmol)	mol%	mol%	mol%	mol%	mol%	mol%	mol%
CO2	44.01	95.11					4.00	48.15
Propane	44.096	1.1					0.469	0.5573
Isobutane	58.122	0.15						0.0759
n-Butane	58.122	0.03						0.0152
Isopentane	72.149	0.08						0.0405
n-Pentane	72.149	0.04						0.0202
Hexane (n)	86.175	0.02	0.103	0.79	0.062	1.249		0.0728
Heptane (n)	100.21			0.22				0.0018
Octane (n)	114.23			0.026				0.0002
Benzene	78.112			0.011				0.0001
Cyclohexane	84.16			0.014				0.0001
Toluene	92.138			0.008				0.0001
VOC Total	51.97	1.42	0.103	1.069	0.062	1.249	0.469	0.7843

[3] The vent streams will be vented to the H-907 incinerator, which has a VOC control efficiency of at least 99%.
[4] All H2S is assumed to be oxidized in the H-907 incinerator and evaluated as SOx emissions from H-907/908.
[5] The Pretreat Vacuum Vent hexane mol% was estimated as 0.0275 x the mol% of hexane in green naphtha (calculated as 0.0275 x 3 wt% hexane x 107.6 green Naphtha MW / 86.175 hexane MW).
[6] Amine Acid Gas, and Sour Water Stripper Gas streams (not shown here) vent to H-907 as a backup when H-401 is down.

AltAir Paramount Refinery -

Renewable Fuels Project

Attachment A: Emissions Calculations

Table A-14: Fuel Composition Data

Renewable Fuel Gas Mixture

Volume % Renewable Fuel Gas:	35
Volume % Natural Gas:	65

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Mole%	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	0.22	0.00228	0.00218	0	0
H2	2.02	0	23.33	0.02727	0.23327	-285.84	324
N2	28.02	0	0.85	0.01370	0.00845	0	0
CO	28.01	0.4288	0.11	0.00182	0.00112	-282.99	321
H2S	34.08	0	0.00	0.00006	0.00003	-562.59	638
CO2	44.01	0.2729	0.53	0.01345	0.00528	0	0
CH4	16.04	0.7488	62.31	0.57839	0.62306	-890.36	1,009
C2H6	30.07	0.7988	3.59	0.06245	0.03588	-1559.9	1,768
C3H8	44.1	0.8170	4.45	0.11350	0.04447	-2220	2,516
iC4H10	58.12	0.8266	0.93	0.03124	0.00929	-2868.8	3,251
nC4H10	58.12	0.8266	0.84	0.02840	0.00844	-2878.5	3,262
iC5H12	72.15	0.8323	1.37	0.05731	0.01373	-3529.2	3,999
nC5H12	72.15	0.8323	0.45	0.01877	0.00449	-3536.1	4,007
C6+	86.17	0.8363	1.03	0.05135	0.01030	-4194.8	4,753
Total	17.28	0.7357	100				1,059
% of Carbon that is Biogenic:		34.8					

Renewable Fuel Gas (Biogenic Fraction Only) (HMB, Propane Recovery Unit, Stream 105 - Fuel Gas from Absorber)

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Rate (lbs/hr)	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	40	0.00656	0.00624	0	0
H2	2.02	0	471	0.07729	0.65535	-285.84	324
N2	28.02	0	0	0.00000	0.00000	0	0
CO	28.01	0.4288	32	0.00525	0.00321	-282.99	321
H2S	34.08	0	1	0.00016	0.00008	-562.59	638
CO2	44.01	0.2729	120	0.01969	0.00766	0	0
CH4	16.04	0.7488	398	0.06531	0.06974	-890.36	1,009
C2H6	30.07	0.7988	322	0.05284	0.03010	-1559.9	1,768
C3H8	44.1	0.8170	1,673	0.27453	0.10662	-2220	2,516
iC4H10	58.12	0.8266	472	0.07745	0.02283	-2868.8	3,251
nC4H10	58.12	0.8266	422	0.06925	0.02041	-2878.5	3,262
iC5H12	72.15	0.8323	959	0.15737	0.03736	-3529.2	3,999
nC5H12	72.15	0.8323	282	0.04628	0.01099	-3536.1	4,007
C6+	86.17	0.8363	902	0.14801	0.02942	-4194.8	4,753
Total	17.13	0.7376	6,094				1,079

AltAir Paramount Refinery -
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Attachment A: Emissions Calculations

Table A-14: Fuel Composition Data

H2 Plant Feed (Natural Gas; HMB, Hydrogen Gen, Stream 1 - Natural Gas from SoCal)

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Mole%	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	0	0.00000	0.00000	0	0
H2	2.02	0	0.6	0.00070	0.00600	-285.84	324
N2	28.02	0	1.3	0.02098	0.01300	0	0
CO	28.01	0.4288		0.00000	0.00000	-282.99	321
H2S	34.08	0		0.00000	0.00000	-562.59	638
CO2	44.01	0.2729	0.4	0.01014	0.00400	0	0
CH4	16.04	0.7488	92.1	0.85098	0.92100	-890.36	1,009
C2H6	30.07	0.7988	3.9	0.06755	0.03900	-1559.9	1,768
C3H8	44.1	0.8170	1.1	0.02794	0.01100	-2220	2,516
iC4H10	58.12	0.8266	0.2	0.00670	0.00200	-2868.8	3,251
nC4H10	58.12	0.8266	0.2	0.00670	0.00200	-2878.5	3,262
iC5H12	72.15	0.8323	0.1	0.00416	0.00100	-3529.2	3,999
nC5H12	72.15	0.8323	0.1	0.00416	0.00100	-3536.1	4,007
C6+	86.17	0.8363		0.00000	0.00000	-4194.8	4,753
Total	17.36	0.7347	100				1,049

H2 Plant Feed (PSA Offgas; HMB, Hydrogen Gen, Stream 14 - PSA Purge Gas)

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Mole%	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	0.6	0.00377	0.00600	0	0
H2	2.02	0	25.6	0.01805	0.25600	-285.84	324
N2	28.02	0	0.9	0.00880	0.00900	0	0
CO	28.01	0.4288	4.2	0.04106	0.04200	-282.99	321
H2S	34.08	0		0.00000	0.00000	-562.59	638
CO2	44.01	0.2729	55.7	0.85554	0.55700	0	0
CH4	16.04	0.7488	13	0.07278	0.13000	-890.36	1,009
C2H6	30.07	0.7988		0.00000	0.00000	-1559.9	1,768
C3H8	44.1	0.8170		0.00000	0.00000	-2220	2,516
iC4H10	58.12	0.8266		0.00000	0.00000	-2868.8	3,251
nC4H10	58.12	0.8266		0.00000	0.00000	-2878.5	3,262
iC5H12	72.15	0.8323		0.00000	0.00000	-3529.2	3,999
nC5H12	72.15	0.8323		0.00000	0.00000	-3536.1	4,007
C6+	86.17	0.8363		0.00000	0.00000	-4194.8	4,753
Total	28.65	0.3056	100				228

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Attachment A: Emissions Calculations

Table A-14: Fuel Composition Data

Natural Gas/PSA Offgas Mixture

MMBtu/hr Natural Gas:	101
MMBtu/hr PSA Offgas:	499

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Mole%	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	0.6	0.00368	0.00575	0	0
H2	2.02	0	24.5	0.01760	0.24548	-285.84	324
N2	28.02	0	0.9	0.00912	0.00917	0	0
CO	28.01	0.4288	4.0	0.03999	0.04023	-282.99	321
H2S	34.08	0	0	0.00000	0.00000	-562.59	638
CO2	44.01	0.2729	53.4	0.83363	0.53374	0	0
CH4	16.04	0.7488	16.3	0.09294	0.16327	-890.36	1,009
C2H6	30.07	0.7988	0.2	0.00175	0.00164	-1559.9	1,768
C3H8	44.1	0.8170	0.05	0.00072	0.00046	-2220	2,516
iC4H10	58.12	0.8266	0.008	0.00017	0.00008	-2868.8	3,251
nC4H10	58.12	0.8266	0.008	0.00017	0.00008	-2878.5	3,262
iC5H12	72.15	0.8323	0.004	0.00011	0.00004	-3529.2	3,999
nC5H12	72.15	0.8323	0.004	0.00011	0.00004	-3536.1	4,007
C6+	86.17	0.8363	0	0.00000	0.00000	-4194.8	4,753
Total	28.18	0.3167	100				262

Renewable Fuel Gas/PSA Offgas Mixture

MMBtu/hr Renewable Fuel Gas:	101
MMBtu/hr PSA Offgas:	499

Component	MW (lbs/lbmol)	CC (lbs C/lb)	Mole%	Mass Fract.	Mol Fract.	HHV (kJ/gmol)	HHV (Btu/scf)
H2O	18.02	0	0.6	0.00374	0.00584	0	0
H2	2.02	0	25.5	0.01828	0.25505	-285.84	324
N2	28.02	0	0.9	0.00893	0.00898	0	0
CO	28.01	0.4288	4.0	0.04006	0.04030	-282.99	321
H2S	34.08	0	0.0001	0.00000	0.00000	-562.59	638
CO2	44.01	0.2729	53.4	0.83403	0.53401	0	0
CH4	16.04	0.7488	15.1	0.08569	0.15054	-890.36	1,009
C2H6	30.07	0.7988	0.1	0.00160	0.00149	-1559.9	1,768
C3H8	44.1	0.8170	0.2	0.00290	0.00185	-2220	2,516
iC4H10	58.12	0.8266	0.04	0.00080	0.00039	-2868.8	3,251
nC4H10	58.12	0.8266	0.04	0.00073	0.00035	-2878.5	3,262
iC5H12	72.15	0.8323	0.06	0.00146	0.00057	-3529.2	3,999
nC5H12	72.15	0.8323	0.02	0.00048	0.00019	-3536.1	4,007
C6+	86.17	0.8363	0.04	0.00131	0.00043	-4194.8	4,753
Total	28.18	0.3166	100				262

Ideal Gas Constant (scf/lbmol @ 60 F):	379.4

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Attachment A: Emissions Calculations

Table A-14: Fuel Composition Data

Notes:

1. HHV values were taken from the following source:
   Felder, Richard M. and Ronald W. Rousseau. *Elementary Principles of Chemical Processes, Third Edition* .
   Appendix B, Table B.1. John Wiley & Sons, Inc, 2005. Print.
2. The MW, CC, and HHV of C6+ were assumed to be the values for n-hexane.

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Attachment A: Emissions Calculations

Table A-15: Toxic Speciation Profiles

	Vapor Weight Fractions, Annual Average																
Toxic Profile	Ammonia	Benzene	Cyclohexane	1,2-Dichlorobenzene	Ethylbenzene	Hexane (n)	Hydrogen Chloride	Hydrogen Sulfide	Isoprene	Cumene	Methyl Alcohol	Naphthalene	Propylene	Toluene	Trimethylbenzene (1,2,4)	Isooctane	Xylenes (mixed isomers)	Source
Distillate fuel oil no. 2		0.011604	0.061889		0.012991	0.044028		0.027248		0.001517		0.000261		0.027400	0.012416	0.042811	0.031867	Calculated following AP-42 Ch. 7.1, annual average
Gasoline (TVP 10.99)		0.001065	0.000415		0.000070	0.008814				0.000001	0.000043	0.000001		0.001022	0.000104	0.005843	0.001044	
Jet kerosene		0.017022	0.384958		0.034583	0.009642		0.022004	0.052762	0.004392		0.000185		0.026833	0.040526		0.090271	
Neat Renewable Jet		0.001786	0.040361		0.003661	0.001010		0.002272	0.005445	0.000466		0.000020		0.002827	0.004318		0.009560	
Spent Caustic		0.000038				0.000003								0.000093			0.000036	
Recovered Oil		0.000472	0.000559		0.000077	0.003720		0.000061	0.000038	0.000006	0.000018	0.000001		0.000488	0.000094	0.002483	0.000552	

	Vapor Weight Fractions, Monthly Maximum																
Toxic Profile	Ammonia	Benzene	Cyclohexane	1,2-Dichlorobenzene	Ethylbenzene	Hexane (n)	Hydrogen Chloride	Hydrogen Sulfide	Isoprene	Cumene	Methyl Alcohol	Naphthalene	Propylene	Toluene	Trimethylbenzene (1,2,4)	Isooctane	Xylenes (mixed isomers)	Source
Distillate fuel oil no. 2		0.012172	0.065283		0.013192	0.046869		0.031898		0.001580		0.000292		0.027906	0.013245	0.044480	0.032452	Calculated following AP-42 Ch. 7.1, monthly maximum
Gasoline (TVP 10.99)		0.001375	0.000533		0.000096	0.011216				0.000002	0.000057	0.000001		0.001358	0.000149	0.007615	0.001435	
Jet kerosene		0.017886	0.406802		0.035084	0.010284		0.025847	0.057673	0.004570		0.000207		0.027362	0.043214		0.091849	
Neat Renewable Jet		0.002306	0.051817		0.005018	0.001284		0.002616	0.006690	0.000653		0.000030		0.003755	0.006174		0.013137	
Spent Caustic		0.000040				0.000003								0.000094			0.000037	
Recovered Oil		0.000608	0.000716		0.000105	0.004729		0.000070	0.000047	0.000009	0.000023	0.000001		0.000647	0.000135	0.003233	0.000757	

	Liquid Weight Fractions																
Toxic Profile	Ammonia	Benzene	Cyclohexane	1,2-Dichlorobenzene	Ethylbenzene	Hexane (n)	Hydrogen Chloride	Hydrogen Sulfide	Isoprene	Cumene	Methyl Alcohol	Naphthalene	Propylene	Toluene	Trimethylbenzene (1,2,4)	Isooctane	Xylenes (mixed isomers)	Source
Distillate fuel oil no. 2		0.000046	0.000238		0.000555	0.000108		0.000000592		0.000138		0.000451		0.000376	0.0026	0.000331	0.00156	API 4723-A Refinery Stream Composition Data, Tbl 59 (Dec 2018)
Gasoline (TVP 10.99)		0.00584	0.00221		0.00409	0.03				0.000173	0.000181	0.0019		0.0193	0.0296	0.0624	0.0699	API 4723-A Refinery Stream Composition Data, Tbl 58 (Dec 2018)
Jet kerosene		0.0000998	0.00219		0.00218	0.000035		0.00000071	0.00005	0.000589		0.00047		0.000544	0.0125		0.00652	API 4723-A Refinery Stream Composition Data, Tbl 61 (Dec 2018)
Spent Caustic		1.50E-07				7.11E-09								1.27E-06			1.79E-06	Design Heat and Material Balance (HMB), W-206 high gas case (9/21/20; Stream #140)
Amine/Amine Regen						0.0891		0.0284										HMB, Amine/Regeneration Unit (3/10/19; max of all streams)
Citric Acid																		Fresh citric acid
Diesel/ Jet/ Spent Caustic		0.0000998	0.00219		0.00218	0.000108		0.00000071	0.00005	0.000589		0.00047		0.000544	0.0125	0.000331	0.00652	Maximum of diesel, jet, and spent caustic
DMDS																		Dimethyl disulfide
Alkylate		0.00584	0.00221		0.00409	0.0042				0.000173	0.000181	0.0019		0.0193	0.0296	0.0624	0.0699	Estimated as naphtha (SDS for alkylate shows 100% naphtha)
Fresh Caustic																		Fresh caustic
Hydrogen Generation				0.0002		0.0054		0.0002					0.0212				0.0004	Maximum of either the profile for Renewable Fuel Gas or the HMB for Hydrogen Generation Unit (3/26/19; max of all streams)
H2S Recovery	0.0719							0.0527										HMB, Sour Water Stripper Unit (3/10/19; Stream #9)
Naphtha		0.00584	0.00221		0.00409	0.0042				0.000173	0.000181	0.0019		0.0193	0.0296	0.0624	0.0699	Estimated as gasoline
Pretreat																		Tallow and soybean oil; zero VOC/toxics
Propane Recovery Unit						0.03		0.0018										Hexane: UOP Data (10/15/13; stream #949A); Other: HMB, Propane Recovery Unit (3/10/19; max of all streams)
Raw Feed																		Tallow and soybean oil; zero VOC/toxics
Recovered Oil		0.000752	0.000865		0.001304	0.003680		0.000000545	0.000010	0.000232	0.000022	0.000629		0.002680	0.007820	0.007713	0.010753	Estimated as 12% naphtha, 20% jet, 68% diesel
Renewable Fuel Gas				0.0002		0.0054		0.0002									0.0004	Maximum of Aug 2019 Toxic Analysis
RFUA	0.0004					0.1	0.0001	0.0019										Estimated as equivalent to RFUB
RFUB	0.0004					0.1	0.0001	0.0019										Hexane: UOP Data (10/15/13; stream #621); Other: HMB, RFUB (6/15/20; max of all streams)
Renewable Naphtha						0.03												Hexane: UOP Data (10/15/2013; stream #949A); Other : HMB, RFUB (6/15/20)
Sour Water Stripper	0.0719							0.0527										HMB, Sour Water Stripper Unit (3/10/19; max of all streams)
Sour Water Stripper Plus	0.0035					0.0001	0.00006	0.00055										HMB, SWSPlus (12/6/19; feed stream)
Storage Tanks: TKFUG	0	0.000100	0.002190	0	0.002180	0.000035	0	7.10E-07	0.000050	0.000589	0	0.000470	0	0.000544	0.012500	0	0.006520	Average profile[1] (4 diesel tanks)
Storage Tanks: FUGTKFM2	0	0.002960	0.001990	0	0.002930	0.015051	0	2.89E-07	0.000020	0.000324	0.000091	0.001144	0	0.009894	0.019878	0.031277	0.037666	Average profile[1] (5 gasoline tanks, 4 diesel tanks, and 1 wastewater tank)
Storage Tanks: FUGTKFM3	0	0.004692	0.002206	0	0.003708	0.024007	0	1.42E-07	0.000010	0.000256	0.000145	0.001614	0	0.015549	0.026180	0.049920	0.057224	Average profile[1] (4 gasoline tanks and 1 denatured ethanol tank)
Storage Tanks: FUGTKFM4	0	0.000752	0.000865	0	0.001304	0.003680	0	5.45E-07	0.000010	0.000232	0.000022	0.000629	0	0.002680	0.007820	0.007713	0.010753	Average profile[1] (2 sour water tanks)
Storage Tanks: FUGTKFM5	0	0.000920	0.002193	0	0.002453	0.004316	0	6.09E-07	0.000043	0.000530	0.000026	0.000674	0	0.003223	0.014943	0.008914	0.015574	Average profile[1] (1 gasoline tank and 6 diesel tanks)
Storage Tanks: FUGTKFM7	0	0.001671	0.000888	0	0.001626	0.008474	0	4.32E-07	2.50E-06	0.000170	0.000051	0.000858	0	0.005683	0.010655	0.017694	0.020943	Average profile[1] (1 spent caustic tank, 1 gasoline tank, 1 recovered oil tank, and 2 diesel tanks)
Storage Tanks: FUGTKFM9	0	2.44E-07	0.000087	0	0.000130	0.000368	0	5.45E-08	1.00E-06	0.000023	2.17E-06	0.000063	0	0.000268	0.000782	0.000771	0.001075	Average profile[1] (2 wastewater tanks)
Storage Tanks: FUGT1000	0	1.50E-07	0	0	0	7.11E-09	0	0	0	0	0	0	0	1.27E-06	0	0	1.79E-06	Average profile[1] (1 spent caustic tank)
Lakewood	0	0.000100	0.002190	0	0.002180	0.000035	0	7.10E-07	0.000050	0.000589	0	0.000470	0	0.000544	0.012500	0	0.006520	Average profile[1] (2 jet tanks)
Cooling Towers	0.00719	0	0	0.00002	0	0.01	0.00001	0.00527	0	0	0	0	0.00212	0	0	0	0.00004	Estimated as 10% of the max concentration among the following profiles: Amine/Amine Regen, Hydrogen Generation, H2S Recovery, Pretreat, Propane Recovery Unit, Renewable Fuel Gas, RFUA, RFUB, Sour Water Stripper, Sour Water Stripper Plus
Wastewater Treatment		2.44E-07	0.000087		0.000130	0.000368		5.45E-08	1.00E-06	0.000023	2.17E-06	0.000063		0.000268	0.000782	0.000771	0.001075	Benzene: Average of 2019-2020 analytical results; Other: Estimated as 10% of Recovered Oil value

Notes:
[1] Average profile based on the number of tanks storing each commodity.

Table A-16: Natural Gas External Combustion Emission Factors for Polycyclic Aromatic Hydrocarbons (PAH)

Chemical	CAS No.	Emission Factor (lbs/mmscf)	Source	Emission Factor (lbs/mmbtu)	Notes
PAH		8.8E-05	[1]	8.6E-08	
Individual PAH Compunds					
Acenaphthene	83329	1.8E-06	[1]	1.8E-09	confirmed PAH with no health risk value
Acenaphthylene	208968	1.8E-06	[1]	1.8E-09	confirmed PAH with no health risk value
Anthracene	120127	2.4E-06	[1]	2.4E-09	confirmed PAH with no health risk value
Benzo(a)anthracene	56553	1.8E-06	[1]	1.8E-09	confirmed PAH
Benzo(a)pyrene	50328	1.2E-06	[1]	1.2E-09	confirmed PAH
Benzo(b)fluoranthene	205992	1.8E-06	[1]	1.8E-09	confirmed PAH
Benzo(g,h,i)perylene	191242	1.2E-06	[1]	1.2E-09	confirmed PAH with no health risk value
Benzo(k)fluoranthene	207089	1.8E-06	[1]	1.8E-09	confirmed PAH
Chrysene	218019	1.8E-06	[1]	1.8E-09	confirmed PAH
Dibenzo(a,h)anthracene	53703	1.2E-06	[1]	1.2E-09	confirmed PAH
7,12-Dimethylbenz(a)anthracene	57976	1.6E-05	[1]	1.6E-08	confirmed PAH
Fluoranthene	206440	3.0E-06	[1]	2.9E-09	confirmed PAH with no health risk value
Fluorene	86737	2.8E-06	[1]	2.7E-09	confirmed PAH with no health risk value
Indeno(1,2,3-cd)pyrene	193395	1.8E-06	[1]	1.8E-09	confirmed PAH
3-Methylchloranthrene	56495	1.8E-06	[1]	1.8E-09	confirmed PAH
2-Methylnaphthalene	91576	2.4E-05	[1]	2.4E-08	confirmed PAH with no health risk value
Phenanthrene	85018	1.7E-05	[1]	1.7E-08	confirmed PAH with no health risk value
Pyrene	129000	5.0E-06	[1]	4.9E-09	confirmed PAH with no health risk value

Sources:

[1] Natural gas combustion PAH emission factors were taken from AP-42 Tbl 1.4-3 for external combustion (heaters, boilers, and afterburners) because the PAH emission factors in the "SCAQMD Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory", Table B-1, were not broken out by individual PAH compound. The PAH totals (excluding naphthalene), were comparable to the SCAQMD Tabel B-1 factor (0.0001 lbs/mmscf).

[2] Emission factors in lbs/mmbtu calculated as EF (lbs/mmscf) divided by a natural gas high heating value of 1,020 Btu/scf.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-17: Mobile Source Emissions Summary

Trucks

Scenario (lb/day)	VOC	CO	NOx	SOx	PM10 Total	PM2.5
Pre-Project	193.22	58.86	783.46	0.95	132.87	54.61
Pre-Project adjusted for EF Change	8.30	128.23	709.17	1.78	63.98	8.82
Project	14.45	222.19	1120.44	2.80	99.43	13.71
Net Emissions	6.15	93.96	411.27	1.02	35.45	4.89

Offsite Rail - Total Routing

Pre-Project (lb/day)

Route	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	11.16	70.77	239.85	0.18	6.32	5.82
Elk Grove Route	6.07	38.52	130.53	0.10	3.44	3.17
Reno Route	14.92	94.63	320.70	0.24	8.45	7.78
Las Vegas Route	4.11	26.07	88.36	0.07	2.33	2.14
Arizona Route	2.58	16.35	55.40	0.04	1.46	1.34
Peak Day(1) + Switching	14.92	94.63	320.70	0.24	8.45	7.78

Peak day based on 20 railcars to NV border via Reno. Assumes no rail switching for pre-project emissions.

Project (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	2.79	17.69	59.96	0.04	1.58	1.45
Reno Route	31.34	198.72	673.48	0.50	17.75	16.33
Las Vegas Route	12.61	79.96	270.98	0.20	7.14	6.57
Arizona Route	11.86	75.20	254.85	0.19	6.72	6.18
Peak Day(1) + Switching	34.31	223.31	748.82	0.57	19.56	18.01

(1) Peak day includes Reno and Oregon deliveries concurrently.

Offsite Rail - (within SCAQMD jurisdiction)

Pre-Project (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	0.79	5.02	17.01	0.01	0.45	0.41
Elk Grove Route	1.52	9.62	32.61	0.02	0.86	0.79
Reno Route	1.32	8.37	28.36	0.02	0.75	0.69
Las Vegas Route	1.65	10.45	35.42	0.03	0.93	0.86
Arizona Route	1.69	10.74	36.40	0.03	0.96	0.88
Peak Day(1) + Switching	3.21	20.36	69.02	0.05	1.82	1.67

(1) Peak day based on 23 railcars to Elk Grove and 10 railcars to AZ border. Assumes no rail switching for pre-project.

Project (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	0.20	1.26	4.25	0.00	0.11	0.10
Reno Route	2.77	17.57	59.55	0.04	1.57	1.44
Las Vegas Route	5.05	32.05	108.63	0.08	2.86	2.63
Arizona Route	7.79	49.41	167.46	0.12	4.41	4.06
Peak Day(1) + Switching	8.17	57.56	187.10	0.15	4.75	4.39

(1) Peak day includes Arizona and Oregon deliveries concurrently.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-17: Mobile Source Emissions Summary

Onsite Rail

Pre-Project (lb/day)						
Route	**VOC**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Pre-Project	0.02	2.67	0.44	0.00	0.16	0.16
Project	0.00	0.00	0.00	0.00	0.00	0.00
Net	-0.02	-2.67	-0.44	0.00	-0.16	-0.16

SCAQMD Threshold Comparison

Source	**VOC**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Trucks						
Pre-Project adjusted for EF Change	8.30	128.23	709.17	1.78	63.98	8.82
Project	14.45	222.19	1120.44	2.80	99.43	13.71
Subtotal, Trucks (lb/day)	6.15	93.96	411.27	1.02	35.45	4.89
Offsite Rail w/in Jurisdiction						
Pre-Project	3.21	20.36	69.02	0.05	1.82	1.67
Project	8.17	57.56	187.10	0.15	4.75	4.39
Subtotal, Offsite Rail (lb/day)	4.96	37.20	118.08	0.10	2.94	2.72
Onsite Rail						
Pre-Project	0.02	2.67	0.44	0.00	0.16	0.16
Project	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal, Onsite Rail (lb/day)	-0.02	-2.67	-0.44	0.00	-0.16	-0.16
Total (lb/day)	11.09	128.49	**528.90**	1.12	38.22	7.45
SCAQMD CEQA Threshold	55	550	55	150	150	55

Bold values exceed threshold

[2] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-17: Mobile Source Emissions Summary

Trucks

Scenario	CO2e
Pre-Project	7504.60
Pre-Project adjusted for EF Change	13983.60
Project	28589.04
Net Emissions	14605.44

Offsite Rail - (within SCAQMD jurisdiction)

Pre-Project

Unit	CO2e
Oregon Route	5.80
Elk Grove Route	20.72
Reno Route	8.70
Las Vegas Route	6.64
Arizona Route	18.36
Switchers	0.00
Total	25.00

Project

Unit	CO2e
Oregon Route	48.49
Reno Route	678.85
Las Vegas Route	1238.35
Arizona Route	1909.04
Switchers	4410.15
Total	8284.87

Onsite Rail

Scenario	CO2e
Pre-Preject	13.87
Project	0.00
Net	-13.87

SCAQMD Threshold Comparison

Source	CO2e
Trucks	
Pre-Project adjusted for EF Change	13983.60
Project	28589.04
Subtotal, Trucks	14605.44
Offsite Rail w/in Jurisdiction	
Pre-Project	25.00
Project	8284.87
Subtotal, Offsite Rail	8259.87
Onsite Rail	
Pre-Project	13.87
Project	0.00
Subtotal, Onsite Rail	-13.87

Total	22851.45

AltAir Paramount Refinery - Renewable Fuels Project

Attachment A: Emissions Calculations

Table A-18: Mobile Source Emissions Calculations - Offsite Trucks

Operational Onroad Emissions Summary

Scenario (lb/day)	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e
Pre-Project	193.22	58.86	783.46	0.95	132.87	54.61	7504.60
Pre-Project adjusted for EF Change	8.30	128.23	709.17	1.78	63.98	8.82	13983.60
Project	14.45	222.19	1120.44	2.80	99.43	13.71	28589.04
Net Emissions	6.15	93.96	411.27	1.02	35.45	4.89	14605.44

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-18: Mobile Source Emissions Calculations - Offsite Trucks

Pre-Project Operational Onroad Emissions

Parameters

	Annual Average			Peak Daily Miles			Assumptions
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**	
Heavy-Heavy Duty Trucks	142.5	75.0	10684.0	160.4	156.0	25020.0	Distances based on actual 2011 customer destinations.

Emission Factors [(1)(2)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	7.34E-03	2.23E-03	3.04E-02	3.70E-05	1.39E-03	3.90E-03	5.29E-03	1.21E-03	9.56E-04	2.16E-03	4.12E+00
Heavy-Heavy Duty Trucks Idle (lb/trip)	6.16E-02	1.91E-02	1.43E-01	1.60E-04	3.23E-03	0.00E+00	3.23E-03	3.09E-03	0.00E+00	3.09E-03	1.78E+01

Peak Daily Emissions (lb/day)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	183.62	55.87	761.12	0.93	34.87	97.50	132.37	30.19	23.93	54.12	103014.41
Heavy-Heavy Duty Trucks Idle	9.61	2.99	22.34	0.03	0.50	0.00	0.50	0.48	0.00	0.48	2784.55
Total	193.22	58.86	783.46	0.95	35.37	97.50	132.87	30.67	23.93	54.61	105798.95

Annual Emissions (lb/yr)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e (MT)
Heavy-Heavy Duty Trucks Transit	28619.00	8708.21	118630.14	144.26	5434.77	15196.06	20630.83	4705.78	3729.94	8435.72	7282.95
Heavy-Heavy Duty Trucks Idle	1685.50	523.86	3920.08	4.39	88.49	0.00	88.49	84.66	0.00	84.66	221.64
Total	30304.49	9232.07	122550.22	148.65	5523.26	15196.06	20719.32	4790.44	3729.94	8520.38	7504.60

(1) Emfac2017 emission factors for Statewide heavy-heavy duty trucks in 2011.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and 0.00054 for PM2.5, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 40 tons

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-18: Mobile Source Emissions Calculations - Offsite Trucks

Pre-Project Operational Onroad Emissions Adjusted for Change in Emission Factors

Parameters

	Annual Average			Peak Daily Miles			Assumptions
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**	
Heavy-Heavy Duty Trucks	142.5	75.0	10684.0	160.4	156.0	25020.0	Distances based on actual 2011 customer destinations.

Emission Factors [(1)(2)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	2.99E-04	4.64E-03	2.80E-02	7.04E-05	2.72E-05	2.53E-03	2.56E-03	2.61E-05	6.46E-04	3.52E-04	7.81E+00
Heavy-Heavy Duty Trucks Idle (lb/trip)	5.22E-03	7.70E-02	6.19E-02	1.24E-04	2.29E-05	0.00E+00	2.29E-05	2.19E-05	0.00E+00	2.19E-05	1.30E+01

Peak Daily Emissions (lb/day)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	7.48	116.21	699.52	1.76	0.68	63.29	63.98	0.65	16.17	8.82	195517.25
Heavy-Heavy Duty Trucks Idle	0.81	12.02	9.65	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2020.70
Total	8.30	128.23	709.17	1.78	0.69	63.29	63.98	0.66	16.17	8.82	197537.95

Annual Emissions (lb/yr)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e (MT)
Heavy-Heavy Duty Trucks Transit	1165.96	18112.26	109027.72	274.51	106.25	9865.26	9971.51	101.66	2520.08	1374.21	13822.76
Heavy-Heavy Duty Trucks Idle	143.00	2109.17	1694.09	3.38	0.63	0.00	0.63	0.60	0.00	0.60	160.84
Total	1308.97	20221.43	110721.82	277.89	106.88	9865.26	9972.14	102.26	2520.08	1374.81	13983.60

(1) Emfac2017 emission factors for 5mph speed bin for T7-single and T7-tractor in SCAQMD. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 24 tons

(3) Emfac2017 emission factors for idling based on T7-single and T7-tractor in SCAQMD. Assumes 15 min of idling onsite. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-18: Mobile Source Emissions Calculations - Offsite Trucks

Project Operational Onroad Emissions

Parameters

	Annual Average			Peak Daily Miles			Assumptions
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**	
Heavy-Heavy Duty Trucks	72.0	300.0	21600.0	72.0	540.0	38880.0	Annual average one-way trip of 36 miles within SCAQMD. Peak Day one-way trip of 36 miles within SCAMQD.

Emission Factors [(1)(2)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	2.99E-04	4.64E-03	2.80E-02	7.04E-05	2.72E-05	2.53E-03	2.56E-03	2.61E-05	6.46E-04	3.52E-04	7.81E+00
Heavy-Heavy Duty Trucks Idle (lb/trip)	5.22E-03	7.70E-02	6.19E-02	1.24E-04	2.29E-05	0.00E+00	2.29E-05	2.19E-05	0.00E+00	2.19E-05	1.30E+01

Peak Daily Emissions (lb/day)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	11.62	180.58	1087.02	2.74	1.06	98.36	99.42	1.01	25.13	13.70	303825.37
Heavy-Heavy Duty Trucks Idle	2.82	41.61	33.42	0.07	0.01	0.00	0.01	0.01	0.00	0.01	6994.72
Total	14.45	222.19	1120.44	2.80	1.07	98.36	99.43	1.03	25.13	13.71	310820.09

Annual Emissions (lb/yr)

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	2357.25	36617.82	220422.95	554.99	214.82	19944.74	20159.55	205.52	5094.88	2778.25	27945.67
Heavy-Heavy Duty Trucks Idle	572.01	8436.67	6776.37	13.53	2.51	0.00	2.51	2.40	0.00	2.40	643.37
Total	2929.25	45054.49	227199.32	568.51	217.32	19944.74	20162.06	207.92	5094.88	2780.65	28589.04

(1) Emfac2017 emission factors for 5mph speed bin for T7-single and T7-tractor in SCAQMD. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 24 tons

(3) Emfac2017 emission factors for idling based on T7-single and T7-tractor in SCAQMD. Assumes 15 min of idling onsite. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

AltAir Paramount Refinery - Renewable Fuels Project

Attachment A: Emissions Calculations

Table A-19: Mobile Source Emissions Calculations - Onsite Trucks

Operational Onroad Emissions Summary

Scenario (lb/day)	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e
Pre-Project	3.05	6.48	15.08	0.01	0.77	0.60	97.80
Pre-Project adjusted for EF Change	0.23	3.37	4.59	0.01	0.20	0.03	88.73
Project	0.79	11.66	15.90	0.04	0.69	0.10	354.91
Net Emissions	0.56	8.29	11.31	0.03	0.49	0.07	266.18

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-19: Mobile Source Emissions Calculations - Onsite Trucks

Pre-Project Operational Onroad Emissions

Parameters

	Annual Average			Peak Daily Miles		
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**
Heavy-Heavy Duty Trucks	0.5	75.0	37.5	0.5	156.0	78.0

Emission Factors [(1)(2)(3)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	2.78E-02	3.73E-02	8.99E-02	7.80E-05	5.68E-03	2.53E-03	8.21E-03	5.43E-03	6.46E-04	6.08E-03	8.18E+00
Heavy-Heavy Duty Trucks Idle (lb/hr)	2.26E-02	9.15E-02	2.07E-01	1.44E-04	3.42E-03	0.00E+00	3.42E-03	3.27E-03	0.00E+00	3.27E-03	1.51E+01

Peak Daily Emissions (lb/day)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	2.17	2.91	7.01	0.01	0.44	0.20	0.64	0.42	0.05	0.47	638.05
Heavy-Heavy Duty Trucks Idle	0.88	3.57	8.07	0.01	0.13	0.00	0.13	0.13	0.00	0.13	590.61
Total	3.05	6.48	15.08	0.01	0.58	0.20	0.77	0.55	0.05	0.60	1228.66

Annual Emissions (lb/yr)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e (MT)
Heavy-Heavy Duty Trucks Transit	379.94	510.82	1230.42	1.07	77.72	34.63	112.34	74.36	8.85	83.20	50.79
Heavy-Heavy Duty Trucks Idle	154.65	626.53	1415.38	0.99	23.39	0.00	23.39	22.37	0.00	22.37	47.01
Total	534.58	1137.35	2645.80	2.06	101.10	34.63	135.73	96.73	8.85	105.57	97.80

(1) Emfac2017 emission factors for 5mph speed bin for T7-single and T7-tractor in SCAQMD.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10 and 0.00054 for PM2.5, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 24 tons

(3) Emfac2017 emission factors for idling based on T7-single and T7-tractor in SCAQMD. Assumes 15 min of idling onsite.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-19: Mobile Source Emissions Calculations - Onsite Trucks

Pre-Project Operational Onroad Emissions Adjusted for Change in Emission Factors

Parameters

	Annual Average			Peak Daily Miles		
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**
Heavy-Heavy Duty Trucks	0.5	75.0	37.5	0.5	156.0	78.0

Emission Factors [(1)(2)(3)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	2.99E-04	4.64E-03	2.80E-02	7.04E-05	2.72E-05	2.53E-03	2.56E-03	2.61E-05	6.46E-04	3.52E-04	7.81E+00
Heavy-Heavy Duty Trucks Idle (lb/hr)	5.22E-03	7.70E-02	6.19E-02	1.24E-04	2.29E-05	0.00E+00	2.29E-05	2.19E-05	0.00E+00	2.19E-05	1.30E+01

Peak Daily Emissions (lb/day)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	0.02	0.36	2.18	0.01	0.00	0.20	0.20	0.00	0.05	0.03	609.53
Heavy-Heavy Duty Trucks Idle	0.20	3.00	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	505.17
Total	0.23	3.37	4.59	0.01	0.00	0.20	0.20	0.00	0.05	0.03	1114.70

Annual Emissions (lb/yr)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e (MT)
Heavy-Heavy Duty Trucks Transit	4.09	63.57	382.68	0.96	0.37	34.63	35.00	0.36	8.85	4.82	48.52
Heavy-Heavy Duty Trucks Idle	35.75	527.29	423.52	0.85	0.16	0.00	0.16	0.15	0.00	0.15	40.21
Total	39.84	590.86	806.20	1.81	0.53	34.63	35.16	0.51	8.85	4.97	88.73

(1) Emfac2017 emission factors for 5mph speed bin for T7-single and T7-tractor in SCAQMD. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 24 tons

(3) Emfac2017 emission factors for idling based on T7-single and T7-tractor in SCAQMD. Assumes 15 min of idling onsite. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-19: Mobile Source Emissions Calculations - Onsite Trucks

Project Operational Onroad Emissions

Parameters

	Annual Average			Peak Daily Miles			Assumptions
Scenario	**Miles/Trip**	**Trucks/day**	**Miles/day**	**Miles/Trip**	**Trucks/day**	**Miles/day**	
Heavy-Heavy Duty Trucks	0.5	300.0	150.0	0.5	540.0	270.0	Truck distribution provided by AltAir.

Emission Factors [(1)(2)(3)]

Vehicle Category	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit (lb/mi)	2.99E-04	4.64E-03	2.80E-02	7.04E-05	2.72E-05	2.53E-03	2.56E-03	2.61E-05	6.46E-04	3.52E-04	7.81E+00
Heavy-Heavy Duty Trucks Idle (lb/hr)	5.22E-03	7.70E-02	6.19E-02	1.24E-04	2.29E-05	0.00E+00	2.29E-05	2.19E-05	0.00E+00	2.19E-05	1.30E+01

Peak Daily Emissions (lb/day)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	0.08	1.25	7.55	0.02	0.01	0.68	0.69	0.01	0.17	0.10	2109.90
Heavy-Heavy Duty Trucks Idle	0.71	10.40	8.35	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1748.68
Total	0.79	11.66	15.90	0.04	0.01	0.68	0.69	0.01	0.17	0.10	3858.58

Annual Emissions (lb/yr)[(3)]

Scenario	VOC	CO	NOx	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2e
Heavy-Heavy Duty Trucks Transit	16.37	254.29	1530.71	3.85	1.49	138.51	140.00	1.43	35.38	19.29	194.07
Heavy-Heavy Duty Trucks Idle	143.00	2109.17	1694.09	3.38	0.63	0.00	0.63	0.60	0.00	0.60	160.84
Total	159.37	2363.46	3224.81	7.24	2.12	138.51	140.62	2.03	35.38	19.89	354.91

(1) Emfac2017 emission factors for 5mph speed bin for T7-single and T7-tractor in SCAQMD. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles is 24 tons

(3) Emfac2017 emission factors for idling based on T7-single and T7-tractor in SCAQMD. Assumes 15 min of idling onsite. Weighted average emissions for 2021 through 2024 emission factors since operations will be phased until completion of the project.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Pre-Project Emissions Summary (Peak Daily)

Peak Daily Emissions (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	11.16	70.77	239.85	0.18	6.32	5.82
Elk Grove Route	6.07	38.52	130.53	0.10	3.44	3.17
Reno Route	14.92	94.63	320.70	0.24	8.45	7.78
Las Vegas Route	4.11	26.07	88.36	0.07	2.33	2.14
Arizona Route	2.58	16.35	55.40	0.04	1.46	1.34
Peak Emissions	14.92	94.63	320.70	0.24	8.45	7.78

Records indicate that the peak day had 20 railcars to NV border via Reno.

Peak Daily Emissions in SCAQMD (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	0.79	5.02	17.01	0.01	0.45	0.41
Elk Grove Route	1.52	9.62	32.61	0.02	0.86	0.79
Reno Route	1.32	8.37	28.36	0.02	0.75	0.69
Las Vegas Route	1.65	10.45	35.42	0.03	0.93	0.86
Arizona Route	1.69	10.74	36.40	0.03	0.96	0.88
Peak Emissions	3.21	20.36	69.02	0.05	1.82	1.67

Records indicate that peak day had 23 railcars to Elk Grove and 10 railcars to AZ border.

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[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Locomotive Distance and Time

TRAVEL TO/FROM NORTHERN BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Northern Air Districts	309	618	42	14.61
Sac. Metro Air District	74.4	148.8	49	3.06
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**39.35**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				36.56

TRAVEL TO/FROM RENO BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Placer Air District	105.2	210.4	27	7.73
Sac. Metro Air District	93.4	186.8	86	2.16
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**31.57**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				28.78

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Locomotive Distance and Time

TRAVEL TO/FROM ELK GROVE[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Sac. Metro Air District	19.8	39.6	69	0.57
SJVAPCD	287.6	575.2	49	11.82
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**21.16**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				18.37

TRAVEL TO/FROM LAS VEGAS BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
MDAQMD NV Border to Yermo	126.8	253.6	61	4.18
MDAQMD Yermo to Downey	62	124	45	2.77
SCAQMD Yermo to Downey	97.2	194.4	53	3.69
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**11.60**
Total Travel Time In SCAQMD				4.65
Total Travel Time In California (MDAQMD) [2]				6.95

TRAVEL FROM ARIZONA BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
ICAPCD Yuma to Rancho	112.3	224.6	60	3.74
SCAQMD Yuma to Rancho	81.6	163.2	48	3.42
SCAQMD Rancho to Downey	54.1	108.2	56	1.92
SCAQMD Downey to Paramount	52.9	105.8	58	1.83
Total Travel Time				10.91
Total Travel Time In SCAQMD				**7.17**
Total Travel Time In California (ICAPCD) [2]				3.74

(1) Travel distance based milepost markers from Union Pacific or review of maps.

(2) Travel inside California but outside SCAQMD.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Oregon Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	9.2%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Northern Air Districts	14.61	
Operating Hours Inside SacMetro	3.06	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	1244.4	bhp-hr/day
Daily Work in Norther Air District	6512.9	
Daily Work in SacMetro	1364.9	
Daily Work in BAAQMD	712.6	
Daily Work in SJVAPCD	5043.1	
Daily Work in EKAQPCD	578.3	
Daily Work in MDAQMD	2086.0	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	59.8	gal/day
Fuel Usage in Northern Air Districts	313.1	
Fuel Usage in SacMetro	65.6	
Fuel Usage in BAAQMD	34.3	
Fuel Usage in SJVAPCD	242.5	
Fuel Usage in EKAPCD	27.8	
Fuel Usage in MDAQMD	100.3	gal/day

(1) Assumes 12 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Oregon Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.75	0.79	5.02	17.01	0.01	0.45	0.41
Daily Emissions in Northern (lb/day)	3.93	4.14	26.28	89.05	0.07	2.35	2.16
Daily Emissions in SacMetro (lb/day)	0.82	0.87	5.51	18.66	0.01	0.49	0.45
Daily Emissions in BAAQMD (lb/day)	0.43	0.45	2.87	9.74	0.01	0.26	0.24
Daily Emissions in SJVAPCD (lb/day)	3.05	3.21	20.35	68.95	0.05	1.82	1.67
Daily Emissions in EKAQPCD (lb/day)	0.35	0.37	2.33	7.91	0.01	0.21	0.19
Daily Emissions in MDAQMD (lb/day)	1.26	1.33	8.42	28.52	0.02	0.75	0.69
Annual Emissions in SCAQMD (tons/yr)[8]	0.14	0.14	0.92	3.11	0.00	0.08	0.08
Annual Emissions in Northern (tons/yr)[8]	0.72	0.76	4.80	16.25	0.01	0.43	0.39
Annual Emissions in SacMetro (tons/yr)[8]	0.15	0.16	1.00	3.41	0.00	0.09	0.08
Annual Emissions in BAAQMD (tons/yr)[8]	0.08	0.08	0.52	1.78	0.00	0.05	0.04
Annual Emissions in SJVAPCD (tons/yr)[8]	0.56	0.59	3.71	12.58	0.01	0.33	0.31
Annual Emissions in EKAPCD (tons/yr)[8]	0.06	0.07	0.43	1.44	0.00	0.04	0.03
Annual Emissions in MDAQMD (tons/yr)[8]	0.23	0.24	1.54	5.21	0.00	0.14	0.13
Daily Emissions	**10.60**	**11.16**	**70.77**	**239.85**	**0.18**	**6.32**	**5.82**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Oregon Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	1347.54	0.14	0.06	1370.50
Daily Emissions in Northern (lb/day)	7052.75	0.76	0.34	7172.93
Daily Emissions in SacMetro (lb/day)	1478.01	0.16	0.07	1503.19
Daily Emissions in BAAQMD (lb/day)	771.69	0.08	0.04	784.84
Daily Emissions in SJVAPCD (lb/day)	5461.10	0.59	0.26	5554.16
Daily Emissions in EKAPCD (lb/day)	626.25	0.07	0.03	636.92
Daily Emissions in MDAQMD (lb/day)	2258.96	0.24	0.11	2297.45
Annual Emissions in SCAQMD (lb/yr) [8]	491852.68	52.77	23.46	500233.60
Annual Emissions in Northern (lb/yr) [8]	2574254.63	276.18	122.79	2618118.64
Annual Emissions in SacMetro (lb/yr) [8]	539473.43	57.88	25.73	548665.78
Annual Emissions in BAAQMD (lb/yr) [8]	281666.66	30.22	13.44	286466.12
Annual Emissions in SJVAPCD (lb/yr) [8]	1993302.97	213.86	95.08	2027267.85
Annual Emissions in EKAPCD (lb/yr) [8]	228580.42	24.52	10.90	232475.32
Annual Emissions in MDAQMD (lb/yr) [8]	824519.41	88.46	39.33	838568.81
Annual Emissions in SCAQMD (MT/yr) [8]	223.10	0.02	0.01	226.90
Annual Emissions in Northern (MT/yr) [8]	1167.67	0.13	0.06	1187.57
Annual Emissions in SacMetro (MT/yr) [8]	244.70	0.03	0.01	248.87
Annual Emissions in BAAQMD (MT/yr) [8]	127.76	0.01	0.01	129.94
Annual Emissions in SJVAPCD (MT/yr) [8]	904.16	0.10	0.04	919.56
Annual Emissions in EKAPCD (MT/yr) [8]	103.68	0.01	0.00	105.45
Annual Emissions in MDAQMD (MT/yr) [8]	374.00	0.04	0.02	380.37

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Elk Grove, CA

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	17.7%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside SacMetro	0.57	
Operating Hours Inside SJVAPCD	1.30	
Operating Hours Inside EKAPCD	4.68	
Operating Hours Inside MDAQMD	1.83	hour/day
Daily Work in SCAQMD	2385.1	bhp-hr/day
Daily Work in SacMetro	490.5	
Daily Work in SJVAPCD	1108.4	
Daily Work in EKAQPCD	3998.2	
Daily Work in MDAQMD	1564.8	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	114.7	gal/day
Fuel Usage in SacMetro	23.6	
Fuel Usage in SJVAPCD	53.3	
Fuel Usage in EKAPCD	192.2	
Fuel Usage in MDAQMD	75.2	gal/day

(1) Assumes 23 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Elk Grove, CA

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB [3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	1.44	1.52	9.62	32.61	0.02	0.86	0.79
Daily Emissions in SacMetro (lb/day)	0.30	0.31	1.98	6.71	0.00	0.18	0.16
Daily Emissions in SJVAPCD (lb/day)	0.67	0.71	4.47	15.16	0.01	0.40	0.37
Daily Emissions in EKAQPCD (lb/day)	2.42	2.54	16.13	54.67	0.04	1.44	1.33
Daily Emissions in MDAQMD (lb/day)	0.95	1.00	6.31	21.40	0.02	0.56	0.52
Annual Emissions in SCAQMD (tons/yr) [8]	0.26	0.28	1.76	5.95	0.00	0.16	0.14
Annual Emissions in SacMetro (tons/yr) [8]	0.05	0.06	0.36	1.22	0.00	0.03	0.03
Annual Emissions in SJVAPCD (tons/yr) [8]	0.12	0.13	0.82	2.77	0.00	0.07	0.07
Annual Emissions in EKAPCD (tons/yr) [8]	0.44	0.46	2.94	9.98	0.01	0.26	0.24
Annual Emissions in MDAQMD (tons/yr) [8]	0.17	0.18	1.15	3.90	0.00	0.10	0.09
Daily Emissions	**5.77**	**6.07**	**38.52**	**130.53**	**0.10**	**3.44**	**3.17**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Elk Grove, CA

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	2582.79	0.28	0.12	2626.80
Daily Emissions in Placer (lb/day)	531.15	0.06	0.03	540.20
Daily Emissions in SacMetro (lb/day)	531.15	0.06	0.03	540.20
Daily Emissions in SJVAPCD (lb/day)	1200.31	0.13	0.06	1220.76
Daily Emissions in EKAPCD (lb/day)	4329.67	0.46	0.21	4403.44
Daily Emissions in MDAQMD (lb/day)	1694.55	0.18	0.08	1723.43
Annual Emissions in SCAQMD (lb/yr) [8]	942717.64	101.14	44.97	958781.08
Annual Emissions in Placer (lb/yr) (8)	193870.51	20.80	9.25	197173.97
Annual Emissions in SacMetro (lb/yr) [8]	193870.51	20.80	9.25	197173.97
Annual Emissions in SJVAPCD (lb/yr) [8]	438112.48	47.00	20.90	445577.69
Annual Emissions in EKAPCD (lb/yr) [8]	1580328.88	169.55	75.38	1607256.89
Annual Emissions in MDAQMD (lb/yr) [8]	618511.51	66.36	29.50	629050.64
Annual Emissions in SCAQMD (MT/yr) [8]	427.61	0.05	0.02	434.90
Annual Emissions in Placer (MT/yr) (8)	87.94	0.01	0.00	89.44
Annual Emissions in SacMetro (MT/yr) [8]	87.94	0.01	0.00	89.44
Annual Emissions in SJVAPCD (MT/yr) [8]	198.73	0.02	0.01	202.11
Annual Emissions in EKAPCD (MT/yr) [8]	716.83	0.08	0.03	729.05
Annual Emissions in MDAQMD (MT/yr) [8]	280.55	0.03	0.01	285.34

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Reno-NV Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	15.4%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Placer Air Districts	7.73	
Operating Hours Inside SacMetro	2.16	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	2074.0	bhp-hr/day
Daily Work in Placer Air District	5743.6	
Daily Work in SacMetro	1604.9	
Daily Work in BAAQMD	1187.7	
Daily Work in SJVAPCD	8405.1	
Daily Work in EKAQPCD	963.8	
Daily Work in MDAQMD	3476.7	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	99.7	gal/day
Fuel Usage in Placer Air Districts	276.1	
Fuel Usage in SacMetro	77.2	
Fuel Usage in BAAQMD	57.1	
Fuel Usage in SJVAPCD	404.1	
Fuel Usage in EKAPCD	46.3	
Fuel Usage in MDAQMD	167.2	gal/day

(1) Assumes 20 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Reno-NV Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	1.25	1.32	8.37	28.36	0.02	0.75	0.69
Daily Emissions in Placer (lb/day)	3.47	3.65	23.17	78.53	0.06	2.07	1.90
Daily Emissions in SacMetro (lb/day)	0.97	1.02	6.47	21.94	0.02	0.58	0.53
Daily Emissions in BAAQMD (lb/day)	0.72	0.76	4.79	16.24	0.01	0.43	0.39
Daily Emissions in SJVAPCD (lb/day)	5.08	5.35	33.91	114.92	0.09	3.03	2.79
Daily Emissions in EKAQPCD (lb/day)	0.58	0.61	3.89	13.18	0.01	0.35	0.32
Daily Emissions in MDAQMD (lb/day)	2.10	2.21	14.03	47.54	0.04	1.25	1.15
Annual Emissions in SCAQMD (tons/yr) [8]	0.23	0.24	1.53	5.18	0.00	0.14	0.13
Annual Emissions in Placer (tons/yr) (8)	0.63	0.67	4.23	14.33	0.01	0.38	0.35
Annual Emissions in SacMetro (tons/yr) [8]	0.18	0.19	1.18	4.00	0.00	0.11	0.10
Annual Emissions in BAAQMD (tons/yr) [8]	0.13	0.14	0.87	2.96	0.00	0.08	0.07
Annual Emissions in SJVAPCD (tons/yr) [8]	0.93	0.98	6.19	20.97	0.02	0.55	0.51
Annual Emissions in EKAPCD (tons/yr) [8]	0.11	0.11	0.71	2.41	0.00	0.06	0.06
Annual Emissions in MDAQMD (tons/yr) [8]	0.38	0.40	2.56	8.68	0.01	0.23	0.21
Daily Emissions	**14.17**	**14.92**	**94.63**	**320.70**	**0.24**	**8.45**	**7.78**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Reno-NV Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	2245.90	0.24	0.11	2284.17
Daily Emissions in Placer (lb/day)	6219.72	0.67	0.30	6325.70
Daily Emissions in SacMetro (lb/day)	1737.99	0.19	0.08	1767.60
Daily Emissions in BAAQMD (lb/day)	1286.15	0.14	0.06	1308.06
Daily Emissions in SJVAPCD (lb/day)	9101.84	0.98	0.43	9256.93
Daily Emissions in EKAPCD (lb/day)	1043.75	0.11	0.05	1061.53
Daily Emissions in MDAQMD (lb/day)	3764.93	0.40	0.18	3829.08
Annual Emissions in SCAQMD (lb/yr) [8]	819754.47	87.95	39.10	833722.67
Annual Emissions in Placer (lb/yr) (8)	2270198.02	243.56	108.28	2308881.06
Annual Emissions in SacMetro (lb/yr) [8]	634365.28	68.06	30.26	645174.55
Annual Emissions in BAAQMD (lb/yr) [8]	469444.43	50.37	22.39	477443.53
Annual Emissions in SJVAPCD (lb/yr) [8]	3322171.61	356.43	158.46	3378779.75
Annual Emissions in EKAPCD (lb/yr) [8]	380967.37	40.87	18.17	387458.86
Annual Emissions in MDAQMD (lb/yr) [8]	1374199.02	147.43	65.55	1397614.69
Annual Emissions in SCAQMD (MT/yr) [8]	371.84	0.04	0.02	378.17
Annual Emissions in Placer (MT/yr) (8)	1029.76	0.11	0.05	1047.30
Annual Emissions in SacMetro (MT/yr) [8]	287.75	0.03	0.01	292.65
Annual Emissions in BAAQMD (MT/yr) [8]	212.94	0.02	0.01	216.57
Annual Emissions in SJVAPCD (MT/yr) [8]	1506.93	0.16	0.07	1532.60
Annual Emissions in EKAPCD (MT/yr) [8]	172.81	0.02	0.01	175.75
Annual Emissions in MDAQMD (MT/yr) [8]	623.33	0.07	0.03	633.95

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from LV-Nevada Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	11.5%	
Operating Hours Inside SCAQMD	4.65	hour/day
Operating Hours Inside MDAQMD	6.95	hour/day
Daily Work in SCAQMD	2590.8	bhp-hr/day
Daily Work in MDAQMD	3872.0	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	124.6	gal/day
Fuel Usage in MDAQMD	186.2	gal/day

(1) Assumes 15 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [(3)]

Notch	Idle[(3)]	DB [(3)]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from LV-Nevada Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	1.57	1.65	10.45	35.42	0.03	0.93	0.86
Daily Emissions in MDAQMD (lb/day)	2.34	2.46	15.62	52.94	0.04	1.40	1.28
Annual Emissions in SCAQMD (tons/yr) [8]	0.29	0.30	1.91	6.46	0.00	0.17	0.16
Annual Emissions in MDAQMD (tons/yr) (8)	0.43	0.45	2.85	9.66	0.01	0.25	0.23
Daily Emissions	**3.90**	**4.11**	**26.07**	**88.36**	**0.07**	**2.33**	**2.14**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	2805.52	0.30	0.13	2853.33
Daily Emissions in MDAQMD (lb/day)	4192.97	0.45	0.20	4264.42
Annual Emissions in SCAQMD (lb/yr) [8]	1024015.40	109.86	48.84	1041464.11
Annual Emissions in MDAQMD (lb/yr) (8)	1530434.18	164.20	73.00	1556512.02
Annual Emissions in SCAQMD (MT/yr) [8]	464.49	0.05	0.02	472.41
Annual Emissions in MDAQMD (MT/yr) (8)	694.20	0.07	0.03	706.03

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Arizona Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	7.7%	
Operating Hours Inside SCAQMD	7.17	hour/day
Operating Hours Inside ICPCD	3.74	hour/day
Daily Work in SCAQMD	2662.6	bhp-hr/day
Daily Work in ICAPCD	1389.4	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	128.0	gal/day
Fuel Usage in ICAPCD	66.8	gal/day

(1) Assumes 10 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [(3)]

Notch	Idle[(3)]	DB [(3)]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Peak Daily)
Travel to/from Arizona Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	1.61	1.69	10.74	36.40	0.03	0.96	0.88
Daily Emissions in ICAPCD (lb/day)	0.84	0.88	5.61	19.00	0.01	0.50	0.46
Annual Emissions in SCAQMD (tons/yr) [8]	0.29	0.31	1.96	6.64	0.00	0.18	0.16
Annual Emissions in ICAPCD (tons/yr) [8]	0.15	0.16	1.02	3.47	0.00	0.09	0.08
Daily Emissions	**2.45**	**2.58**	**16.35**	**55.40**	**0.04**	**1.46**	**1.34**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	2883.33	0.31	0.14	2932.46
Daily Emissions in ICAPCD (lb/day)	1504.53	0.16	0.07	1530.17
Annual Emissions in SCAQMD (lb/yr) [8]	1052416.19	112.91	50.20	1070348.83
Annual Emissions in ICAPCD (lb/yr) [8]	549153.49	58.92	26.19	558510.79
Annual Emissions in SCAQMD (MT/yr) [8]	477.37	0.05	0.02	485.51
Annual Emissions in ICAPCD (MT/yr) [8]	249.09	0.03	0.01	253.34

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Pre-Project Emissions Summary (Annual Average)

Annual Emissions (tons/yr)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Oregon Route	0.05	0.33	1.12	0.00	0.03	0.03	81.79
Elk Grove Route	0.05	0.33	1.14	0.00	0.03	0.03	87.21
Reno Route	0.06	0.40	1.35	0.00	0.04	0.03	98.43
Las Vegas Route	0.01	0.07	0.23	0.00	0.01	0.01	16.57
Arizona Route	0.02	0.11	0.38	0.00	0.01	0.01	27.93
Total	0.20	0.18	0.61	0.00	0.02	0.01	44.51

Annual Emissions in SCAQMD Jurisdiction (tons/yr)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Oregon Route	0.00	0.02	0.08	0.00	0.00	0.00	5.80
Elk Grove Route	0.01	0.08	0.28	0.00	0.01	0.01	20.72
Reno Route	0.01	0.04	0.12	0.00	0.00	0.00	8.70
Las Vegas Route	0.00	0.03	0.09	0.00	0.00	0.00	6.64
Arizona Route	0.01	0.07	0.25	0.00	0.01	0.01	18.36
Total	0.04	0.10	0.34	0.00	0.01	0.01	25.00

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Locomotive Distance and Time

TRAVEL TO/FROM NORTHERN BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Northern Air Districts	309	618	42	14.61
Sac. Metro Air District	74.4	148.8	49	3.06
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**39.35**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				36.56

TRAVEL TO/FROM RENO BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Placer Air District	105.2	210.4	27	7.73
Sac. Metro Air District	93.4	186.8	86	2.16
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**31.57**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				28.78

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Locomotive Distance and Time

TRAVEL TO/FROM ELK GROVE[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Sac. Metro Air District	19.8	39.6	69	0.57
SJVAPCD	287.6	575.2	49	11.82
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**21.16**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				18.37

TRAVEL TO/FROM LAS VEGAS BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
MDAQMD NV Border to Yermo	126.8	253.6	61	4.18
MDAQMD Yermo to Downey	62	124	45	2.77
SCAQMD Yermo to Downey	97.2	194.4	53	3.69
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**11.60**
Total Travel Time In SCAQMD				4.65
Total Travel Time In California (MDAQMD) [2]				6.95

TRAVEL FROM ARIZONA BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
ICAPCD Yuma to Rancho	112.3	224.6	60	3.74
SCAQMD Yuma to Rancho	81.6	163.2	48	3.42
SCAQMD Rancho to Downey	54.1	108.2	56	1.92
SCAQMD Downey to Paramount	52.9	105.8	58	1.83
Total Travel Time				10.91
Total Travel Time In SCAQMD				**7.17**
Total Travel Time In California (ICAPCD) [2]				3.74

(1) Travel distance based milepost markers from Union Pacific or review of maps.

(2) Travel inside California but outside SCAQMD.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Oregon Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	6.2%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Northern Air Districts	14.61	
Operating Hours Inside SacMetro	3.06	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	829.6	bhp-hr/day
Daily Work in Norther Air District	4341.9	
Daily Work in SacMetro	909.9	
Daily Work in BAAQMD	475.1	
Daily Work in SJVAPCD	3362.0	
Daily Work in EKAQPCD	385.5	
Daily Work in MDAQMD	1390.7	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	39.9	gal/day
Fuel Usage in Northern Air Districts	208.7	
Fuel Usage in SacMetro	43.7	
Fuel Usage in BAAQMD	22.8	
Fuel Usage in SJVAPCD	161.6	
Fuel Usage in EKAPCD	18.5	
Fuel Usage in MDAQMD	66.9	gal/day

(1) Assumes 8 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Oregon Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.50	0.53	3.35	11.34	0.01	0.30	0.28
Daily Emissions in Northern (lb/day)	2.62	2.76	17.52	59.37	0.04	1.56	1.44
Daily Emissions in SacMetro (lb/day)	0.55	0.58	3.67	12.44	0.01	0.33	0.30
Daily Emissions in BAAQMD (lb/day)	0.29	0.30	1.92	6.50	0.00	0.17	0.16
Daily Emissions in SJVAPCD (lb/day)	2.03	2.14	13.56	45.97	0.03	1.21	1.11
Daily Emissions in EKAQPCD (lb/day)	0.23	0.25	1.56	5.27	0.00	0.14	0.13
Daily Emissions in MDAQMD (lb/day)	0.84	0.88	5.61	19.01	0.01	0.50	0.46
Annual Emissions in SCAQMD (tons/yr)[8]	0.00	0.00	0.02	0.08	0.00	0.00	0.00
Annual Emissions in Northern (tons/yr)[8]	0.02	0.02	0.12	0.42	0.00	0.01	0.01
Annual Emissions in SacMetro (tons/yr)[8]	0.00	0.00	0.03	0.09	0.00	0.00	0.00
Annual Emissions in BAAQMD (tons/yr)[8]	0.00	0.00	0.01	0.05	0.00	0.00	0.00
Annual Emissions in SJVAPCD (tons/yr)[8]	0.01	0.01	0.09	0.32	0.00	0.01	0.01
Annual Emissions in EKAPCD (tons/yr)[8]	0.00	0.00	0.01	0.04	0.00	0.00	0.00
Annual Emissions in MDAQMD (tons/yr)[8]	0.01	0.01	0.04	0.13	0.00	0.00	0.00
Daily Emissions (lb/day)	**7.07**	**7.44**	**47.18**	**159.90**	**0.12**	**4.21**	**3.88**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 14 trips in 2011.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Oregon Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	898.36	0.10	0.04	913.67
Daily Emissions in Northern (lb/day)	4701.83	0.50	0.22	4781.95
Daily Emissions in SacMetro (lb/day)	985.34	0.11	0.05	1002.13
Daily Emissions in BAAQMD (lb/day)	514.46	0.06	0.02	523.23
Daily Emissions in SJVAPCD (lb/day)	3640.74	0.39	0.17	3702.77
Daily Emissions in EKAPCD (lb/day)	417.50	0.04	0.02	424.61
Daily Emissions in MDAQMD (lb/day)	1505.97	0.16	0.07	1531.63
Annual Emissions in SCAQMD (lb/yr) [8]	12577.05	1.35	0.60	12791.36
Annual Emissions in Northern (lb/yr) [8]	65825.69	7.06	3.14	66947.33
Annual Emissions in SacMetro (lb/yr) [8]	13794.75	1.48	0.66	14029.81
Annual Emissions in BAAQMD (lb/yr) [8]	7202.44	0.77	0.34	7325.16
Annual Emissions in SJVAPCD (lb/yr) [8]	50970.30	5.47	2.43	51838.81
Annual Emissions in EKAPCD (lb/yr) [8]	5844.98	0.63	0.28	5944.57
Annual Emissions in MDAQMD (lb/yr) [8]	21083.60	2.26	1.01	21442.86
Annual Emissions in SCAQMD (MT/yr) [8]	5.70	0.00	0.00	5.80
Annual Emissions in Northern (MT/yr) [8]	29.86	0.00	0.00	30.37
Annual Emissions in SacMetro (MT/yr) [8]	6.26	0.00	0.00	6.36
Annual Emissions in BAAQMD (MT/yr) [8]	3.27	0.00	0.00	3.32
Annual Emissions in SJVAPCD (MT/yr) [8]	23.12	0.00	0.00	23.51
Annual Emissions in EKAPCD (MT/yr) [8]	2.65	0.00	0.00	2.70
Annual Emissions in MDAQMD (MT/yr) [8]	9.56	0.00	0.00	9.73

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Elk Grove, CA

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	6.2%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside SacMetro	0.57	
Operating Hours Inside SJVAPCD	1.30	
Operating Hours Inside EKAPCD	4.68	
Operating Hours Inside MDAQMD	1.83	hour/day
Daily Work in SCAQMD	829.6	bhp-hr/day
Daily Work in SacMetro	170.6	
Daily Work in SJVAPCD	385.5	
Daily Work in EKAQPCD	1390.7	
Daily Work in MDAQMD	544.3	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	39.9	gal/day
Fuel Usage in SacMetro	8.2	
Fuel Usage in SJVAPCD	18.5	
Fuel Usage in EKAPCD	66.9	
Fuel Usage in MDAQMD	26.2	gal/day

(1) Assumes 8 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Elk Grove, CA

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB [3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.50	0.53	3.35	11.34	0.01	0.30	0.28
Daily Emissions in SacMetro (lb/day)	0.10	0.11	0.69	2.33	0.00	0.06	0.06
Daily Emissions in SJVAPCD (lb/day)	0.23	0.25	1.56	5.27	0.00	0.14	0.13
Daily Emissions in EKAQPCD (lb/day)	0.84	0.88	5.61	19.01	0.01	0.50	0.46
Daily Emissions in MDAQMD (lb/day)	0.33	0.35	2.20	7.44	0.01	0.20	0.18
Annual Emissions in SCAQMD (tons/yr) [8]	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Annual Emissions in SacMetro (tons/yr) [8]	0.00	0.00	0.02	0.06	0.00	0.00	0.00
Annual Emissions in SJVAPCD (tons/yr) [8]	0.01	0.01	0.04	0.13	0.00	0.00	0.00
Annual Emissions in EKAPCD (tons/yr) [8]	0.02	0.02	0.14	0.48	0.00	0.01	0.01
Annual Emissions in MDAQMD (tons/yr) [8]	0.01	0.01	0.05	0.19	0.00	0.00	0.00
Daily Emissions (lb/day)	**2.01**	**2.11**	**13.40**	**45.40**	**0.03**	**1.20**	**1.10**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 50 trips in 2011.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Elk Grove, CA

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	898.36	0.10	0.04	913.67
Daily Emissions in Placer (lb/day)	184.75	0.02	0.01	187.90
Daily Emissions in SacMetro (lb/day)	184.75	0.02	0.01	187.90
Daily Emissions in SJVAPCD (lb/day)	417.50	0.04	0.02	424.61
Daily Emissions in EKAPCD (lb/day)	1505.97	0.16	0.07	1531.63
Daily Emissions in MDAQMD (lb/day)	589.41	0.06	0.03	599.45
Annual Emissions in SCAQMD (lb/yr) [8]	44918.05	4.82	2.14	45683.43
Annual Emissions in Placer (lb/yr) (8)	9237.43	0.99	0.44	9394.83
Annual Emissions in SacMetro (lb/yr) [8]	9237.43	0.99	0.44	9394.83
Annual Emissions in SJVAPCD (lb/yr) [8]	20874.92	2.24	1.00	21230.62
Annual Emissions in EKAPCD (lb/yr) [8]	75298.58	8.08	3.59	76581.63
Annual Emissions in MDAQMD (lb/yr) [8]	29470.47	3.16	1.41	29972.63
Annual Emissions in SCAQMD (MT/yr) [8]	20.37	0.00	0.00	20.72
Annual Emissions in Placer (MT/yr) (8)	4.19	0.00	0.00	4.26
Annual Emissions in SacMetro (MT/yr) [8]	4.19	0.00	0.00	4.26
Annual Emissions in SJVAPCD (MT/yr) [8]	9.47	0.00	0.00	9.63
Annual Emissions in EKAPCD (MT/yr) [8]	34.16	0.00	0.00	34.74
Annual Emissions in MDAQMD (MT/yr) [8]	13.37	0.00	0.00	13.60

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Reno-NV Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	5.4%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Placer Air Districts	7.73	
Operating Hours Inside SacMetro	2.16	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	725.9	bhp-hr/day
Daily Work in Placer Air District	2010.3	
Daily Work in SacMetro	561.7	
Daily Work in BAAQMD	415.7	
Daily Work in SJVAPCD	2941.8	
Daily Work in EKAQPCD	337.3	
Daily Work in MDAQMD	1216.9	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	34.9	gal/day
Fuel Usage in Placer Air Districts	96.6	
Fuel Usage in SacMetro	27.0	
Fuel Usage in BAAQMD	20.0	
Fuel Usage in SJVAPCD	141.4	
Fuel Usage in EKAPCD	16.2	
Fuel Usage in MDAQMD	58.5	gal/day

(1) Assumes 7 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Reno-NV Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.44	0.46	2.93	9.92	0.01	0.26	0.24
Daily Emissions in Placer (lb/day)	1.21	1.28	8.11	27.49	0.02	0.72	0.67
Daily Emissions in SacMetro (lb/day)	0.34	0.36	2.27	7.68	0.01	0.20	0.19
Daily Emissions in BAAQMD (lb/day)	0.25	0.26	1.68	5.68	0.00	0.15	0.14
Daily Emissions in SJVAPCD (lb/day)	1.78	1.87	11.87	40.22	0.03	1.06	0.98
Daily Emissions in EKAQPCD (lb/day)	0.20	0.21	1.36	4.61	0.00	0.12	0.11
Daily Emissions in MDAQMD (lb/day)	0.74	0.77	4.91	16.64	0.01	0.44	0.40
Annual Emissions in SCAQMD (tons/yr) [8]	0.01	0.01	0.04	0.12	0.00	0.00	0.00
Annual Emissions in Placer (tons/yr) (8)	0.01	0.02	0.10	0.33	0.00	0.01	0.01
Annual Emissions in SacMetro (tons/yr) [8]	0.00	0.00	0.03	0.09	0.00	0.00	0.00
Annual Emissions in BAAQMD (tons/yr) [8]	0.00	0.00	0.02	0.07	0.00	0.00	0.00
Annual Emissions in SJVAPCD (tons/yr) [8]	0.02	0.02	0.14	0.48	0.00	0.01	0.01
Annual Emissions in EKAPCD (tons/yr) [8]	0.00	0.00	0.02	0.06	0.00	0.00	0.00
Annual Emissions in MDAQMD (tons/yr) [8]	0.01	0.01	0.06	0.20	0.00	0.01	0.00
Daily Emissions (lb/day)	**4.96**	**5.22**	**33.12**	**112.25**	**0.08**	**2.96**	**2.72**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 24 trips in 2011.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Reno-NV Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	786.07	0.08	0.04	799.46
Daily Emissions in Placer (lb/day)	2176.90	0.23	0.10	2214.00
Daily Emissions in SacMetro (lb/day)	608.30	0.07	0.03	618.66
Daily Emissions in BAAQMD (lb/day)	450.15	0.05	0.02	457.82
Daily Emissions in SJVAPCD (lb/day)	3185.64	0.34	0.15	3239.93
Daily Emissions in EKAPCD (lb/day)	365.31	0.04	0.02	371.54
Daily Emissions in MDAQMD (lb/day)	1317.73	0.14	0.06	1340.18
Annual Emissions in SCAQMD (lb/yr) [8]	18865.58	2.02	0.90	19187.04
Annual Emissions in Placer (lb/yr) (8)	52245.65	5.61	2.49	53135.89
Annual Emissions in SacMetro (lb/yr) [8]	14599.09	1.57	0.70	14847.85
Annual Emissions in BAAQMD (lb/yr) [8]	10803.65	1.16	0.52	10987.74
Annual Emissions in SJVAPCD (lb/yr) [8]	76455.46	8.20	3.65	77758.22
Annual Emissions in EKAPCD (lb/yr) [8]	8767.47	0.94	0.42	8916.86
Annual Emissions in MDAQMD (lb/yr) [8]	31625.40	3.39	1.51	32164.28
Annual Emissions in SCAQMD (MT/yr) [8]	8.56	0.00	0.00	8.70
Annual Emissions in Placer (MT/yr) (8)	23.70	0.00	0.00	24.10
Annual Emissions in SacMetro (MT/yr) [8]	6.62	0.00	0.00	6.73
Annual Emissions in BAAQMD (MT/yr) [8]	4.90	0.00	0.00	4.98
Annual Emissions in SJVAPCD (MT/yr) [8]	34.68	0.00	0.00	35.27
Annual Emissions in EKAPCD (MT/yr) [8]	3.98	0.00	0.00	4.04
Annual Emissions in MDAQMD (MT/yr) [8]	14.35	0.00	0.00	14.59

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from LV-Nevada Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	5.4%	
Operating Hours Inside SCAQMD	4.65	hour/day
Operating Hours Inside MDAQMD	6.95	hour/day
Daily Work in SCAQMD	1209.0	bhp-hr/day
Daily Work in MDAQMD	1806.9	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	58.1	gal/day
Fuel Usage in MDAQMD	86.9	gal/day

(1) Assumes 7 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [(3)]

Notch	Idle[(3)]	DB [(3)]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from LV-Nevada Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.73	0.77	4.88	16.53	0.01	0.44	0.40
Daily Emissions in MDAQMD (lb/day)	1.09	1.15	7.29	24.71	0.02	0.65	0.60
Annual Emissions in SCAQMD (tons/yr) [8]	0.00	0.00	0.03	0.09	0.00	0.00	0.00
Annual Emissions in MDAQMD (tons/yr) (8)	0.01	0.01	0.04	0.14	0.00	0.00	0.00
Daily Emissions (lb/day)	**1.82**	**1.92**	**12.17**	**41.24**	**0.03**	**1.09**	**1.00**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 11 trips in 2011.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	1309.24	0.14	0.06	1331.55
Daily Emissions in MDAQMD (lb/day)	1956.72	0.21	0.09	1990.06
Annual Emissions in SCAQMD (lb/yr) [8]	14401.68	1.55	0.69	14647.08
Annual Emissions in MDAQMD (lb/yr) (8)	21523.91	2.31	1.03	21890.67
Annual Emissions in SCAQMD (MT/yr) [8]	6.53	0.00	0.00	6.64
Annual Emissions in MDAQMD (MT/yr) (8)	9.76	0.00	0.00	9.93

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Arizona Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	4.6%	
Operating Hours Inside SCAQMD	7.17	hour/day
Operating Hours Inside ICPCD	3.74	hour/day
Daily Work in SCAQMD	1597.6	bhp-hr/day
Daily Work in ICAPCD	833.6	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	76.8	gal/day
Fuel Usage in ICAPCD	40.1	gal/day

(1) Assumes 6 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [(3)]

Notch	Idle[(3)]	DB [(3)]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Pre-Project, Annual Average)
Travel to/from Arizona Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.97	1.02	6.45	21.84	0.02	0.58	0.53
Daily Emissions in ICAPCD (lb/day)	0.50	0.53	3.36	11.40	0.01	0.30	0.28
Annual Emissions in SCAQMD (tons/yr) [8]	0.01	0.01	0.07	0.25	0.00	0.01	0.01
Annual Emissions in ICAPCD (tons/yr) [8]	0.01	0.01	0.04	0.13	0.00	0.00	0.00
Daily Emissions (lb/day)	**1.47**	**1.55**	**9.81**	**33.24**	**0.02**	**0.88**	**0.81**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 23 trips in 2011.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	1730.00	0.19	0.08	1759.48
Daily Emissions in ICAPCD (lb/day)	902.72	0.10	0.04	918.10
Annual Emissions in SCAQMD (lb/yr) [8]	39789.98	4.27	1.90	40467.98
Annual Emissions in ICAPCD (lb/yr) [8]	20762.52	2.23	0.99	21116.30
Annual Emissions in SCAQMD (MT/yr) [8]	18.05	0.00	0.00	18.36
Annual Emissions in ICAPCD (MT/yr) [8]	9.42	0.00	0.00	9.58

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Project Emissions Summary

Peak Daily Emission (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	2.79	17.69	59.96	0.04	1.58	1.45
Reno Route	31.34	198.72	673.48	0.50	17.75	16.33
Las Vegas Route	12.61	79.96	270.98	0.20	7.14	6.57
Arizona Route	11.86	75.20	254.85	0.19	6.72	6.18
Peak Day(1)	34.13	216.42	733.44	0.55	19.33	17.78

(1) Peak day includes Reno and Oregon deliveries concurrently.

Annual Emissions (tons/yr)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Oregon Route	0.44	2.76	9.35	0.01	0.25	0.23	683.55
Reno Route	4.89	31.00	105.06	0.08	2.77	2.55	7677.51
Las Vegas Route	1.97	12.47	42.27	0.03	1.11	1.03	3089.11
Arizona Route	1.85	11.73	39.76	0.03	1.05	0.96	2905.18
Maximum Annual(1)	9.14	57.97	196.45	0.15	5.18	4.76	14355.36

(1) Maximum annual is Reno and Oregon combined.

Peak Daily Emissions on SCAQMD Jurisdiction (lb/day)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5
Oregon Route	0.20	1.26	4.25	0.00	0.11	0.10
Reno Route	2.77	17.57	59.55	0.04	1.57	1.44
Las Vegas Route	5.05	32.05	108.63	0.08	2.86	2.63
Arizona Route	7.79	49.41	167.46	0.12	4.41	4.06
Peak Day(1)	7.99	50.67	171.72	0.13	4.53	4.16

(1) Peak day includes Arizona and Oregon deliveries concurrently.

Annual Emissions (tons/yr)

Unit	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Oregon Route	0.03	0.20	0.66	0.00	0.02	0.02	48.49
Reno Route	0.43	2.74	9.29	0.01	0.24	0.23	678.85
Las Vegas Route	0.79	5.00	16.95	0.01	0.45	0.41	1238.35
Arizona Route	1.22	7.71	26.12	0.02	0.69	0.63	1909.04
Maximum Annual(1)	2.47	15.65	53.02	0.04	1.40	1.29	3874.73

[2] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Locomotive Distance and Time

TRAVEL TO/FROM NORTHERN BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Northern Air Districts	309	618	42	14.61
Sac. Metro Air District	74.4	148.8	49	3.06
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**39.35**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				36.56

TRAVEL TO/FROM RENO BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Placer Air District	105.2	210.4	27	7.73
Sac. Metro Air District	93.4	186.8	86	2.16
BAAQMD	49.8	99.6	62	1.60
SJVAPCD	277.7	555.4	49	11.31
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**31.57**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				28.78

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Locomotive Distance and Time

TRAVEL TO/FROM ELK GROVE[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
Sac. Metro Air District	19.8	39.6	69	0.57
SJVAPCD	287.6	575.2	49	11.82
EKAPCD	21.2	42.4	33	1.30
MDAQMD	112	224	48	4.68
SCAQMD Rancho to Downey	52.9	105.8	58	1.83
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**21.16**
Total Travel Time In SCAQMD				2.79
Total Travel Time In California [2]				18.37

TRAVEL TO/FROM LAS VEGAS BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
MDAQMD NV Border to Yermo	126.8	253.6	61	4.18
MDAQMD Yermo to Downey	62	124	45	2.77
SCAQMD Yermo to Downey	97.2	194.4	53	3.69
SCAQMD Downey to Paramount	9.6	19.2	20	0.96
Total Travel Time				**11.60**
Total Travel Time In SCAQMD				4.65
Total Travel Time In California (MDAQMD) [2]				6.95

TRAVEL FROM ARIZONA BORDER[1]

Rail Segment	Distance (one-way miles)	Distance (roundtrip miles)	Average Speed (mph)	Travel time (hours)
ICAPCD Yuma to Rancho	112.3	224.6	60	3.74
SCAQMD Yuma to Rancho	81.6	163.2	48	3.42
SCAQMD Rancho to Downey	54.1	108.2	56	1.92
SCAQMD Downey to Paramount	52.9	105.8	58	1.83
Total Travel Time				10.91
Total Travel Time In SCAQMD				**7.17**
Total Travel Time In California (ICAPCD) [2]				3.74

(1) Travel distance based milepost markers from Union Pacific or review of maps.

(2) Travel inside California but outside SCAQMD.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Oregon Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	2.3%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Northern Air Districts	14.61	
Operating Hours Inside SacMetro	3.06	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	311.1	bhp-hr/day
Daily Work in Norther Air District	1628.2	
Daily Work in SacMetro	341.2	
Daily Work in BAAQMD	178.2	
Daily Work in SJVAPCD	1260.8	
Daily Work in EKAQPCD	144.6	
Daily Work in MDAQMD	521.5	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	15.0	gal/day
Fuel Usage in Northern Air Districts	78.3	
Fuel Usage in SacMetro	16.4	
Fuel Usage in BAAQMD	8.6	
Fuel Usage in SJVAPCD	60.6	
Fuel Usage in EKAPCD	7.0	
Fuel Usage in MDAQMD	25.1	gal/day

(1) Assumes 3 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Oregon Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	0.19	0.20	1.26	4.25	0.00	0.11	0.10
Daily Emissions in Northern (lb/day)	0.98	1.04	6.57	22.26	0.02	0.59	0.54
Daily Emissions in SacMetro (lb/day)	0.21	0.22	1.38	4.67	0.00	0.12	0.11
Daily Emissions in BAAQMD (lb/day)	0.11	0.11	0.72	2.44	0.00	0.06	0.06
Daily Emissions in SJVAPCD (lb/day)	0.76	0.80	5.09	17.24	0.01	0.45	0.42
Daily Emissions in EKAQPCD (lb/day)	0.09	0.09	0.58	1.98	0.00	0.05	0.05
Daily Emissions in MDAQMD (lb/day)	0.32	0.33	2.10	7.13	0.01	0.19	0.17
Annual Emissions in SCAQMD (tons/yr)[8]	0.03	0.03	0.20	0.66	0.00	0.02	0.02
Annual Emissions in Northern (tons/yr)[8]	0.15	0.16	1.02	3.47	0.00	0.09	0.08
Annual Emissions in SacMetro (tons/yr)[8]	0.03	0.03	0.21	0.73	0.00	0.02	0.02
Annual Emissions in BAAQMD (tons/yr)[8]	0.02	0.02	0.11	0.38	0.00	0.01	0.01
Annual Emissions in SJVAPCD (tons/yr)[8]	0.12	0.13	0.79	2.69	0.00	0.07	0.07
Annual Emissions in EKAPCD (tons/yr)[8]	0.01	0.01	0.09	0.31	0.00	0.01	0.01
Annual Emissions in MDAQMD (tons/yr)[8]	0.05	0.05	0.33	1.11	0.00	0.03	0.03
Daily Emissions	**2.65**	**2.79**	**17.69**	**59.96**	**0.04**	**1.58**	**1.45**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations with delivereies received 6 days per week.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Oregon Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	336.89	0.04	0.02	342.63
Daily Emissions in Northern (lb/day)	1763.19	0.19	0.08	1793.23
Daily Emissions in SacMetro (lb/day)	369.50	0.04	0.02	375.80
Daily Emissions in BAAQMD (lb/day)	192.92	0.02	0.01	196.21
Daily Emissions in SJVAPCD (lb/day)	1365.28	0.15	0.07	1388.54
Daily Emissions in EKAPCD (lb/day)	156.56	0.02	0.01	159.23
Daily Emissions in MDAQMD (lb/day)	564.74	0.06	0.03	574.36
Annual Emissions in SCAQMD (lb/yr) [8]	105108.24	11.28	5.01	106899.24
Annual Emissions in Northern (lb/yr) [8]	550114.69	59.02	26.24	559488.37
Annual Emissions in SacMetro (lb/yr) [8]	115284.73	12.37	5.50	117249.13
Annual Emissions in BAAQMD (lb/yr) [8]	60191.78	6.46	2.87	61217.42
Annual Emissions in SJVAPCD (lb/yr) [8]	425966.11	45.70	20.32	433224.36
Annual Emissions in EKAPCD (lb/yr) [8]	48847.32	5.24	2.33	49679.66
Annual Emissions in MDAQMD (lb/yr) [8]	176198.67	18.90	8.40	179201.01
Annual Emissions in SCAQMD (MT/yr) [8]	47.68	0.01	0.00	48.49
Annual Emissions in Northern (MT/yr) [8]	249.53	0.03	0.01	253.78
Annual Emissions in SacMetro (MT/yr) [8]	52.29	0.01	0.00	53.18
Annual Emissions in BAAQMD (MT/yr) [8]	27.30	0.00	0.00	27.77
Annual Emissions in SJVAPCD (MT/yr) [8]	193.22	0.02	0.01	196.51
Annual Emissions in EKAPCD (MT/yr) [8]	22.16	0.00	0.00	22.53
Annual Emissions in MDAQMD (MT/yr) [8]	79.92	0.01	0.00	81.29

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Reno-NV Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	32.3%	
Operating Hours Inside SCAQMD	2.79	hour/day
Operating Hours Inside Placer Air Districts	7.73	
Operating Hours Inside SacMetro	2.16	
Operating Hours Inside BAAQMD	1.60	
Operating Hours Inside SJVAPCD	11.31	
Operating Hours Inside EKAPCD	1.30	
Operating Hours Inside MDAQMD	4.68	hour/day
Daily Work in SCAQMD	4355.4	bhp-hr/day
Daily Work in Placer Air District	12061.6	
Daily Work in SacMetro	3370.4	
Daily Work in BAAQMD	2494.2	
Daily Work in SJVAPCD	17650.7	
Daily Work in EKAQPCD	2024.1	
Daily Work in MDAQMD	7301.1	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	209.4	gal/day
Fuel Usage in Placer Air Districts	579.9	
Fuel Usage in SacMetro	162.0	
Fuel Usage in BAAQMD	119.9	
Fuel Usage in SJVAPCD	848.6	
Fuel Usage in EKAPCD	97.3	
Fuel Usage in MDAQMD	351.0	gal/day

(1) Assumes 42 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Reno-NV Border

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB[3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

Criteria Pollutant Emissions [4]

	HC	VOC[5]	CO	NOx	SOx[6]	PM10	PM2.5[7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	2.63	2.77	17.57	59.55	0.04	1.57	1.44
Daily Emissions in Placer (lb/day)	7.29	7.67	48.66	164.91	0.12	4.35	4.00
Daily Emissions in SacMetro (lb/day)	2.04	2.14	13.60	46.08	0.03	1.21	1.12
Daily Emissions in BAAQMD (lb/day)	1.51	1.59	10.06	34.10	0.03	0.90	0.83
Daily Emissions in SJVAPCD (lb/day)	10.66	11.23	71.21	241.33	0.18	6.36	5.85
Daily Emissions in EKAQPCD (lb/day)	1.22	1.29	8.17	27.67	0.02	0.73	0.67
Daily Emissions in MDAQMD (lb/day)	4.41	4.64	29.46	99.83	0.07	2.63	2.42
Annual Emissions in SCAQMD (tons/yr)[8]	0.41	0.43	2.74	9.29	0.01	0.24	0.23
Annual Emissions in Placer (tons/yr) (8)	1.14	1.20	7.59	25.73	0.02	0.68	0.62
Annual Emissions in SacMetro (tons/yr)[8]	0.32	0.33	2.12	7.19	0.01	0.19	0.17
Annual Emissions in BAAQMD (tons/yr)[8]	0.24	0.25	1.57	5.32	0.00	0.14	0.13
Annual Emissions in SJVAPCD (tons/yr)[8]	1.66	1.75	11.11	37.65	0.03	0.99	0.91
Annual Emissions in EKAPCD (tons/yr)[8]	0.19	0.20	1.27	4.32	0.00	0.11	0.10
Annual Emissions in MDAQMD (tons/yr)[8]	0.69	0.72	4.60	15.57	0.01	0.41	0.38
Daily Emissions	**29.76**	**31.34**	**198.72**	**673.48**	**0.50**	**17.75**	**16.33**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations with delivereies received 6 days per week.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Reno-NV Border

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	4716.40	0.51	0.22	4796.76
Daily Emissions in Placer (lb/day)	13061.41	1.40	0.62	13283.97
Daily Emissions in SacMetro (lb/day)	3649.77	0.39	0.17	3711.96
Daily Emissions in BAAQMD (lb/day)	2700.91	0.29	0.13	2746.94
Daily Emissions in SJVAPCD (lb/day)	19113.86	2.05	0.91	19439.55
Daily Emissions in EKAPCD (lb/day)	2191.87	0.24	0.10	2229.22
Daily Emissions in MDAQMD (lb/day)	7906.35	0.85	0.38	8041.07
Annual Emissions in SCAQMD (lb/yr) [8]	1471515.42	157.87	70.19	1496589.30
Annual Emissions in Placer (lb/yr) (8)	4075160.95	437.21	194.38	4144599.65
Annual Emissions in SacMetro (lb/yr) [8]	1138729.13	122.17	54.32	1158132.50
Annual Emissions in BAAQMD (lb/yr) [8]	842684.91	90.41	40.19	857043.83
Annual Emissions in SJVAPCD (lb/yr) [8]	5963525.59	639.81	284.45	6065141.08
Annual Emissions in EKAPCD (lb/yr) [8]	683862.52	73.37	32.62	695515.20
Annual Emissions in MDAQMD (lb/yr) [8]	2466781.37	264.65	117.66	2508814.09
Annual Emissions in SCAQMD (MT/yr) [8]	667.48	0.07	0.03	678.85
Annual Emissions in Placer (MT/yr) (8)	1848.48	0.20	0.09	1879.98
Annual Emissions in SacMetro (MT/yr) [8]	516.52	0.06	0.02	525.33
Annual Emissions in BAAQMD (MT/yr) [8]	382.24	0.04	0.02	388.75
Annual Emissions in SJVAPCD (MT/yr) [8]	2705.04	0.29	0.13	2751.13
Annual Emissions in EKAPCD (MT/yr) [8]	310.20	0.03	0.01	315.48
Annual Emissions in MDAQMD (MT/yr) [8]	1118.92	0.12	0.05	1137.99

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from LV-Nevada Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [(1)]	35.4%	
Operating Hours Inside SCAQMD	4.65	hour/day
Operating Hours Inside MDAQMD	6.95	hour/day
Daily Work in SCAQMD	7945.0	bhp-hr/day
Daily Work in MDAQMD	11874.1	bhp-hr/day
Brake Specific Fuel Consumption [(2)]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	382.0	gal/day
Fuel Usage in MDAQMD	570.9	gal/day

(1) Assumes 46 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [(3)]

Notch	Idle[(3)]	DB [(3)]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from LV-Nevada Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	4.80	5.05	32.05	108.63	0.08	2.86	2.63
Daily Emissions in MDAQMD (lb/day)	7.17	7.55	47.90	162.35	0.12	4.28	3.94
Annual Emissions in SCAQMD (tons/yr) [8]	0.75	0.79	5.00	16.95	0.01	0.45	0.41
Annual Emissions in MDAQMD (tons/yr)[8]	1.12	1.18	7.47	25.33	0.02	0.67	0.61
Daily Emissions	**11.97**	**12.61**	**79.96**	**270.98**	**0.20**	**7.14**	**6.57**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations with delivereies received 6 days per week.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	8603.60	0.92	0.41	8750.20
Daily Emissions in MDAQMD (lb/day)	12858.44	1.38	0.61	13077.54
Annual Emissions in SCAQMD (lb/yr) [8]	2684323.10	287.99	128.04	2730062.62
Annual Emissions in MDAQMD (lb/yr) [8]	4011834.04	430.42	191.36	4080193.69
Annual Emissions in SCAQMD (MT/yr) [8]	1217.60	0.13	0.06	1238.35
Annual Emissions in MDAQMD (MT/yr) [8]	1819.76	0.20	0.09	1850.76

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Arizona Border

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	4	
Engine Tier	T2	
Average Load Factor (See Below)	27.4%	
Railcar Utilization [1]	35.4%	
Operating Hours Inside SCAQMD	7.17	hour/day
Operating Hours Inside ICPCD	3.74	hour/day
Daily Work in SCAQMD	12248.0	bhp-hr/day
Daily Work in ICAPCD	6391.0	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage in SCAQMD	588.8	gal/day
Fuel Usage in ICAPCD	307.3	gal/day

(1) Assumes 46 tanker cars in a 130 unit line-haul train on a peak day. Port of Long Beach (POLB), 2013 Air Emissions Inventory, 2014.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [3]

Notch	Idle[3]	DB [3]	1	2	3	4	5	6	7	8
Percent of Rated Power	0.6%	2.7%	4.5%	11.5%	23.5%	35.0%	48.5%	64.0%	85.0%	100.0%
Average Percentage of Time in Notch	38.0%	12.5%	6.5%	6.5%	5.2%	4.4%	3.8%	3.9%	3.0%	16.2%
Average Load Factor										27.4%

(3) Notch distribution and power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-20: Mobile Source Emissions Calculations - Offsite Rail

Operational Locomotive Emissions (Project)
Travel to/from Arizona Border

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Daily Emissions in SCAQMD (lb/day)	7.40	7.79	49.41	167.46	0.12	4.41	4.06
Daily Emissions in ICAPCD (lb/day)	3.86	4.07	25.78	87.38	0.07	2.30	2.12
Annual Emissions in SCAQMD (tons/yr) [8]	1.15	1.22	7.71	26.12	0.02	0.69	0.63
Annual Emissions in ICAPCD (tons/yr) [8]	0.60	0.63	4.02	13.63	0.01	0.36	0.33
Daily Emissions	**11.26**	**11.86**	**75.20**	**254.85**	**0.19**	**6.72**	**6.18**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 365 days of operations with delivereies received 6 days per week.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions in SCAQMD (lb/day)	13263.33	1.42	0.63	13489.33
Daily Emissions in ICAPCD (lb/day)	6920.84	0.74	0.33	7038.77
Annual Emissions in SCAQMD (lb/yr) [8]	4138158.12	443.97	197.38	4208670.26
Annual Emissions in ICAPCD (lb/yr) [8]	2159301.63	231.67	102.99	2196095.05
Annual Emissions in SCAQMD (MT/yr) [8]	1877.06	0.20	0.09	1909.04
Annual Emissions in ICAPCD (MT/yr) [8]	979.45	0.11	0.05	996.14

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-21: Mobile Source Emissions Calculations - Offsite Rail Switcher

Net Offsite Rail Switcher Emissions

Peak Daily	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Pre-Project Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Project Emissions	0.18	6.89	15.38	0.02	0.23	0.23	12.08
Net Emissions	0.18	6.89	15.38	0.02	0.23	0.23	12.08

Annual	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)
Pre-Project Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Project Emissions	66.63	2515.21	5613.42	8.33	83.29	83.29	4410.15
Net Emissions	66.63	2515.21	5613.42	8.33	83.29	83.29	4410.15

The activity level of rail switching in the pre-project is uncertain, therefore, excluded from the analysis to be conservative.

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-21: Mobile Source Emissions Calculations - Offsite Rail Switcher

Project Offsite Rail Moving Emissions

Parameters

Locomotive	Switcher	
Engine Size [1]	3000	bhp
Engine Tier [2]	RR Genset	
Engine Load [3]	11.5	percent
Operating Hours	6.0	hour/day

Criteria Pollutant Emissions

	VOC	CO	NOx	SOx	PM10	PM2.5[5]	CO2e (MT)
Emission Factors (g/hp-hr)[2]	0.04	1.51	3.37	0.005	0.05	0.05	0.006
Emission Factors (lb/hr)	0.03	1.15	2.56	0.00	0.04	0.04	2.014
Daily Emissions (lb/day)	0.18	6.89	15.38	0.02	0.23	0.23	12.08
Annual Emissions (lb/yr)	66.63	2515.21	5613.42	8.33	83.29	83.29	4410.15

(1) Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Dolores and ICTF Rail Yards (CARB 2007).

(2) Port of Los Angeles Emissions Inventory Methodology (Starcrest 2019).

(3) Locomotive Emissions Standards: Regulatory Support Document (EPA 1998). Assumes all switching activites occur in notch 2.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-22: Mobile Source Emissions Calculations - Onsite Rail

Net Onsite Rail Moving Emissions

Peak Daily	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)	Fuel (gal)
Pre-Project Emissions	0.02	2.67	0.44	0.00	0.16	0.16	0.04	3.71
Project Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Emissions	-0.02	-2.67	-0.44	0.00	-0.16	-0.16	-0.04	-3.71

Annual	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT)	Fuel (gal)
Pre-Project Emissions	5.98	973.64	161.54	0.58	58.42	58.42	13.87	1355.00
Project Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Emissions	-5.98	-973.64	-161.54	-0.58	-58.42	-58.42	-13.87	-1355.00

Assumes electric onsite rail mover for Project.

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-22: Mobile Source Emissions Calculations - Onsite Rail

Pre-Project Onsite Rail Moving Emissions

Parameters

Locomotive	Viking Trackmobile	
Engine Model	Cummins QSB-4.5	
Engine Size	130	bhp
Engine Tier	3	
Operating Hours	2.5	hour/day
Fuel Consumption [1]	1.48	gal/hr

(1) Offroad2011 Inventory for SCAQMD 2011 model year off-highway tractor for 2011 operations.

Criteria Pollutant Emissions

	VOC	CO	NOx	SOx	PM10	PM2.5[5]	CO2e (MT)	Fuel (gal)
CARB Emission Factors (g/kwhr)[2]	--	5	--	--	0.3	0.3	--	--
CARB Emission Factors (lb/hr)	--	1.07	--	--	0.06	0.06	--	--
Offroad Emission Factors (lb/hr)[3]	0.01	--	0.18	0.00	0.01	0.01	0.02	--
Max Emission Factors (lb/hr)[4]	0.01	1.07	0.18	0.00	0.06	0.06	0.02	1.48
Daily Emissions (lb/day)	0.02	2.67	0.44	0.00	0.16	0.16	0.04	3.71
Annual Emissions (lb/yr)	5.98	973.64	161.54	0.58	58.42	58.42	13.87	1355.00

(2) CARB Executive Order U-R-002-0558.

(3) Offroad2011 Inventory for SCAQMD 2011 model year off-highway tractor for 2011 operations.

(4) Best available emission factors.

(5) Assumes PM2.5 is equivalent to PM10.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Project Marine Vessel Emission Summary

Peak Daily (lb/day)	ROG	CO	NOx	SOx	PM10	PM2.5	CO2(MT)	CH4(MT)	N2O(MT)	CO2e (MT)
Propulsion Emissions										
OGV emissions	15.7	35.5	426.5	9.7	6.4	6.1	6.6	0.0	0.0	6.7
Assist Tug Emissions	0.7	2.3	6.1	0.1	0.3	0.3	0.2	0.0	0.0	0.2
Subtotal	16.3	37.8	432.6	9.8	6.7	6.3	6.8	0.0	0.0	6.9
Non-Propulsion Emissions										
OGV emissions	3.3	7.6	74.9	4.7	1.8	1.7	3.2	0.0	0.0	3.3
Assist Tug Emissions	0.7	2.3	6.1	0.1	0.3	0.3	0.2	0.0	0.0	0.2
Subtotal	4.0	9.9	81.0	4.8	2.1	2.0	3.4	0.0	0.0	3.5
Total Emissions	20.3	47.7	513.7	14.6	8.8	8.3	10.2	0.0	0.0	10.4

Assumes 100 percent of the unloaded commodity on the vessel belongs to AltAir on a peak day.

Annual Emission (lb/yr)	ROG	CO	NOx	SOx	PM10	PM2.5	CO2(MT)	CH4(MT)	N2O(MT)	CO2e (MT)
Propulsion Emissions										
OGV emissions	548.6	1261.2	15261.3	347.5	229.5	216.0	238.7	0.0	0.0	242.3
Assist Tug Emissions	22.9	78.2	205.5	3.6	9.0	9.0	6.2	0.0	0.0	6.3
Subtotal	571.5	1339.4	15466.8	351.1	238.5	225.0	244.9	0.0	0.0	248.6
Non-Propulsion Emissions - Non-Hoteling										
OGV emissions	16.0	36.9	364.1	17.7	7.8	7.3	12.1	0.0	0.0	12.3
Assist Tug Emissions	22.9	52.1	137.0	2.4	6.0	6.0	6.2	0.0	0.0	6.3
Subtotal	38.8	89.0	501.1	20.1	13.8	13.3	18.3	0.0	0.0	18.6
Non-Propulsion Emissions - Hoteling										
OGV emissions	241.6	552.9	5456.2	358.6	133.3	125.5	245.3	0.0	0.0	250.1
Assist Tug Emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	241.6	552.9	5456.2	358.6	133.3	125.5	245.3	0.0	0.0	250.1
Total Emissions	851.9	1981.3	21424.1	729.8	385.6	363.8	508.5	0.0	0.0	517.3
Total Emissions (tons/yr)	0.4	1.0	10.7	0.4	0.2	0.2	508.5	0.0	0.0	517.3

Assumes 50 percent of the non-hoteling emissions are attributed to AltAir due to shared vessel emissions. 3 vessel calls per month.

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Ocean Going Vessel Parameters

OGV Main Engine Usage per One-Way Transit

Activity	Propulsion Max kW [1]	Speed (Kts) [2]	Load Factor [3][1]	Distance (nm/trip) [4]	Duration (hr/trip)	Energy Consumed (kW-hr/trip)
Fairway: AQMD Overwater Boundary to PZ	5,932	12.0	0.51	31.2	2.60	7,896.68
Precautionary Zone - VSR	5,932	9.0	0.22	20	2.22	2,847.36
Harbor Transit/Maneuvering - Inbound	5,932	9.0	0.22	3.5	0.39	498.29
Harbor Transit/Maneuvering - Outbound	5,932	9.0	0.22	3.5	0.39	498.29
Docking [5]	5,932	0	0.02	0	0.25	29.66
Hoteling [6]	5,932	0	0.00	0	43.00	-

Notes: (1) Port of Los Angeles 2018 Emissions Inventory - Table 3.9 (Starcrest 2019)

(2) Assumes 12 kts in open waters. San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.1 (Starcrest 2019)

(3) Load factor = (speed/max speed)$^{3.}$ Load factor of 0.02 represents minimum load factor for propulsion engines.

(4) Average distances from Port of Long Beach 2012 Emissions Inventory - Table 1.1 (Starcrest 2013).

(5) Average time for vessel docking is 15 minutes per one-way trip (2005 Emissions Inventory Section 2.5.6).

(6) Assumes average of 43 hours of hoteling per visit. Provided by World Energy.

OGV Auxiliary Generator Usage per One-Way Transit

Activity	Auxiliary kW per Vessel [1]	Hours/ Transit	kW-Hrs/ Transit
Precautionary Zone - 24 nm Boundary to Buoy	79	2.22	176
Transition - Buoy to Harbor	79	0.39	31
Harbor Transit/Maneuvering	208	0.39	81
Docking	208	0.25	52
Hoteling	102	43.00	4,386

Notes: (1) Port of Los Angeles 2018 Emissions Inventory - Table3.2 (Starcrest 2019)

OGV Auxiliary Boiler Usage per One-Way Transit

Activity	Boiler kW per Vessel [1]	Hours/ Transit	kW-Hrs/ Transit
Precautionary Zone - 24 nm Boundary to Buoy	33	2.22	73
Transition - Buoy to Harbor	65	0.39	25
Harbor Transit/Maneuvering	65	0.39	25
Docking	65	0.25	16
Hoteling	96	43.00	4,128

Notes: (1) Port of Long Beach 2016 Emissions Inventory - Table 2.3 (Starcrest 2017) for Misc.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Ocean Going Vessel Emission Factors

Emission Factors for OGV

Engine Type	Assumed Fuel Type	Assumed Fuel Use Application	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	Source
Main Propulsion Engine (g/kW-hr)												
OGV Main Engines	MGO (0.1% S)	All (current in-use fuel)	0.60	1.40	17.01	0.39	0.26	0.24	589	0.0120	0.02900	(1,2)
Auxiliary Engine (g/kW-hr)												
OGV Auxiliary Engines	MGO (0.1% S)	All (current in-use fuel)	0.60	1.40	13.82	0.46	0.26	0.24	686	0.0120	0.02900	(3,4)
Auxiliary Boiler (g/kW-hr)												
OGV Auxiliary Boilers	MGO (0.1% S)	All (current in-use fuel)	0.10	0.20	1.97	0.61	0.14	0.13	922	0.002	0.0750	(5,6)

Notes: (1) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.3 (Starcrest 2019)
(2) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.4 (Starcrest 2019)
(3) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.9 (Starcrest 2019)
(4) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.10 (Starcrest 2019)
(5) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.11 (Starcrest 2019)
(6) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.12 (Starcrest 2019)

Load Emission Factor Adjustments for OGV Main Propulsion Engines

Activity	Load Factor	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O
Fairway: AQMD Overwater Boundary to PZ	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Precautionary Zone - Annual Average	0.22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Precautionary Zone - Annual Average	0.22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Harbor Transit/Maneuvering - Outbound	0.22	0.93	0.93	0.99	1.00	0.98	0.98	1.00	0.93	0.99
Docking	0.02	21.18	9.70	4.63	1.00	7.29	7.29	1.00	21.18	4.63
Hoteling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: (1) Port of Long Beach Air Emissions Inventory - 2013 - Table 2.7. (Starcrest 2014)

Low-Load Emission Factor Regression Factors for OGV Main Propulsion Engines

Variable	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O
Exponent	1.5	1	1.5	0	1.5	1.5	0	1.5	1.5
Intercept	0.3859	0.1458	10.4496	0	0.2551	0.2551	0	0.3859	10.4496
Coefficient	0.0667	0.8378	0.1255	1	0.0059	0.0059	1	0.0667	0.1255
Ref. EF @ 20% Load	1.132	4.335	11.853	1	0.321	0.321	1	1.132	11.853

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Ocean Going Vessel Emissions

Total Emissions per Delivery (lb/visit) - Combined

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2(MT)	CH4(MT)	N2O(MT)	CO2e (MT)
Fairway: AQMD Overwater Boundary to PZ	21.4	49.9	603.6	14.1	9.1	8.6	9.7	0.0	0.0	9.8
Precautionary Zone - VSR	7.6	17.8	215.6	5.0	3.3	3.1	3.4	0.0	0.0	3.5
Harbor Transit x2	1.4	3.4	42.0	1.1	0.7	0.6	0.7	0.0	0.0	0.8
Docking	0.9	1.1	6.8	0.1	0.2	0.1	0.1	0.0	0.0	0.1
Hoteling	6.7	15.4	151.6	10.0	3.7	3.5	6.8	0.0	0.0	6.9
Annual Average Visit Total	**38.1**	**87.5**	**1,019.6**	**30.3**	**16.9**	**15.9**	**20.7**	**0.0**	**0.0**	**21.1**
Annual Average Total - 36 Ships (tons/yr)	**0.7**	**1.6**	**18.4**	**0.5**	**0.3**	**0.3**	**747.0**	**0.0**	**0.0**	**759.4**

Total Emissions per One-way Trip (g/visit) - ME

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
Fairway: AQMD Overwater Boundary to PZ	4,738	11,055	134,322	3,072	2,014	1,895	4,651,144	95	229	4,721,756
Precautionary Zone - VSR	1,708	3,986	48,434	1,108	726	683	1,677,095	34	83	1,702,556
Harbor Transit/Maneuvering	277	648	8,366	194	124	117	293,492	6	14	297,881
Docking	377	403	2,333	12	55	52	17,470	8	4	18,844
Hoteling	-	-	-	-	-	-	-	-	-	-
Total	**7,101**	**16,092**	**193,456**	**4,385**	**2,919**	**2,747**	**6,639,200**	**142**	**330**	**6,741,037**

Total Emissions per One-way Trip (g/visit) - AE

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
Precautionary Zone - 24 nm Boundary to Buoy	105	246	2,426	80	45	42	120,431	2	5	122,001
Transition - Buoy to Harbor	18	43	425	14	8	7	21,075	0	1	21,350
Harbor Transit	49	113	1,118	37	21	19	55,490	1	2	56,213
Docking	31	73	719	24	13	12	35,672	1	2	36,137
Hoteling	2,632	6,140	60,615	1,996	1,118	1,053	3,008,796	53	127	3,048,016
Total	**2,835**	**6,615**	**65,302**	**2,150**	**1,205**	**1,134**	**3,241,464**	**57**	**137**	**3,283,717**

Total Emissions per One-way Trip (g/visit) - Boiler

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
Precautionary Zone - 24 nm Boundary to Buoy	7	15	144	45	10	9	67,613	0	6	69,256
Transition - Buoy to Harbor	3	5	50	15	3	3	23,306	0	2	23,872
Harbor Transit	3	5	50	15	3	3	23,306	0	2	23,872
Docking	2	3	32	10	2	2	14,983	0	1	15,347
Hoteling	413	826	8,132	2,522	561	528	3,806,016	8	310	3,898,483
Total	**426.81**	**853.63**	**8,408.23**	**2,607.83**	**580.47**	**546.32**	**3,935,224.06**	**8.54**	**320.11**	**4,030,830**

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Assist Tug Parameters

Tug Main Engine Usage per One-Way Transit

Activity	Propulsion Max kW [1]	Speed (Kts) [2]	Load Factor [3]	Distance (nm/trip) [4]	Duration (hr/trip)	Energy Consumed (kW-hr/trip)
Precautionary Zone - VSR	2,046	9.0	0.31	10.4	1.16	732.92
Harbor Transit/Maneuvering - Inbound	2,046	9.0	0.31	3.5	0.39	246.66
Harbor Transit/Maneuvering - Outbound	2,046	9.0	0.31	3.5	0.39	246.66
Docking[5]	2,046	0	0.31	0	0.25	158.57
Hoteling[6]	2,046	0	0.00	0	0.00	-

Notes: (1) Port of Los Angeles 2018 Emissions Inventory - Table 4.1 (Starcrest 2019)

(2) Assumes 12 kts in open waters. San Pedro Bay Ports Emissions Inventory Methodology Report - Table 2.1 (Starcrest 2019)

(3) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 3.1 (Starcrest 2019).

(4) Average distances from Port of Long Beach 2012 Emissions Inventory - Table 1.1 (Starcrest 2013).

(5) Average time for vessel docking is 15 minutes per one-way trip (2005 Emissions Inventory Section 2.5.6).

(6) Assumes average of 43 hours of hoteling per visit. Provided by World Energy.

Tug Auxiliary Generator Usage per One-Way Transit

Activity	Auxiliary kW per Vessel [1]	Load Factor [2]	Hours/ Transit	kW-Hrs/ Transit
Precautionary Zone - VSR	184	0.43	1.16	91
Harbor Transit/Maneuvering - Inbound	184	0.43	0.39	31
Harbor Transit/Maneuvering - Outbound	184	0.43	0.39	31
Docking	184	0.43	0.25	20
Hoteling	184	0.43	-	-

Notes: (1) Port of Los Angeles 2018 Emissions Inventory - Table 4.2 (Starcrest 2019)

(2) San Pedro Bay Ports Emissions Inventory Methodology Report - Table 3.1 (Starcrest 2019)

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Assist Tug Emission Factors

Emission Factors

Engine Type	Assumed Fuel Type	Assumed Fuel Use Application	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	Source
Main Propulsion Engine (g/kW-hr)												
Tugboat Main Engines	ULSD (15 ppm S)	All (CARB required)	0.91	2.64	9.80	0.17	0.48	0.48	652	0.0180	0.031	(1)
Auxiliary Engine (g/kW-hr)												
Tugboat Auxiliary Engines	ULSD (15 ppm S)	All (CARB required)	1.09	3.73	9.80	0.17	0.43	0.43	652	0.0220	0.031	(1)

Notes: (1) San Pedro Bay Ports Emissions Inventory Methodology Report - Appendix A (Starcrest 2019). Assumes model year 2000.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-23: Mobile Source Emissions Calculations - Offsite Marine Vessels

Assist Tug Emissions

Total Emissions per Delivery (lb/visit)

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2(MT)	CH4(MT)	N2O(MT)	CO2e (MT)
Precautionary Zone - VSR x2	3.4	4.4	14.6	0.3	0.7	0.7	0.4	0.0	0.0	0.4
Harbor Transit x2	1.1	3.4	12.0	0.2	0.6	0.6	0.4	0.0	0.0	0.4
Docking	0.4	1.1	3.9	0.1	0.2	0.2	0.1	0.0	0.0	0.1
Hoteling	-	-	-	-	-	-	-	-	-	-
Annual Average Visit Total	**4.9**	**8.8**	**30.4**	**0.5**	**1.5**	**1.5**	**0.9**	**0.0**	**0.0**	**0.9**
Annual Average Total - 72 Ships (tons/yr)	**0.2**	**0.3**	**1.1**	**0.0**	**0.1**	**0.1**	**66.2**	**0.0**	**0.0**	**67.1**

Total Emissions per One-way Trip (g/visit) - ME

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
Precautionary Zone - VSR	667	651	2,417	42	118	118	160,820	4	8	163,210
Harbor Transit	224	651	2,417	42	118	118	160,820	4	8	163,210
Docking	144	419	1,554	27	76	76	103,384	3	5	104,921
Hoteling	-	-	-	-	-	-	-	-	-	-
Total	**1,036**	**1,721**	**6,388**	**111**	**313**	**313**	**425,025**	**12**	**20**	**431,340**

Total Emissions per One-way Trip (g/visit) - AE

Project Scenario/Activity	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
Precautionary Zone - VSR	100	341	896	16	39	39	59,611	2	3	60,506
Harbor Transit	34	115	302	5	13	13	20,061	1	1	20,362
Docking	22	74	194	3	9	9	12,897	0	1	13,090
Hoteling	-	-	-	-	-	-	-	-	-	-
Total	**155**	**530**	**1,391**	**24**	**61**	**61**	**92,569**	**3**	**4**	**93,958**

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-24: Moble Source Emissions Calculations - Offsite Rail Mover

Pre-Project Emissions

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	2	
Engine Tier	T2	
Average Load Factor (See Below)	2.5%	
Railcar Utilization [1]	100.0%	
Operating Hours near Facility	0.50	hour/day
Daily Work	111.5	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage	5.4	gal/day

(1) Assumes all railcars are for delivery.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [3]

Notch	Idle	1
Percent of Rated Power	0.6%	4.5%
Average Percentage of Time in Notch	50.0%	50.0%
Average Load Factor		2.5%

(3) Power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998. Assumes 50% idling and 50% moving time during railcar delivery.

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Peak Hourly Emissions (lb/hr)	**0.07**	**0.07**	**0.45**	**1.52**	**0.00**	**0.04**	**0.04**
Daily Emissions (lb/day)	**0.07**	**0.07**	**0.45**	**1.52**	**0.00**	**0.04**	**0.04**
Annual Emissions (lb/yr) [8]	**5.39**	**5.67**	**35.99**	**121.96**	**0.09**	**3.21**	**2.96**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 80 days of operations with deliveries in 2011.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions (lb/day)	120.74	0.01	0.01	122.80
Annual Emissions (lb/yr) [8]	9659.44	1.04	0.46	9824.03
Annual Emissions (MT/yr) [8]	**4.38**	**0.00**	**0.00**	**4.46**

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

[1] Pre-project emissions are based on 2011 activity levels.

AltAir Paramount Refinery - Renewable Fuels Project
Attachment A: Emissions Calculations
Table A-24: Moble Source Emissions Calculations - Offsite Rail Mover

Project Emissions

Parameters

Locomotive	GE Dash 9	
Engine Size	4400	bhp
Number of Engines	2	
Engine Tier	T2	
Average Load Factor (See Below)	2.5%	
Railcar Utilization [1]	100.0%	
Operating Hours near Facility	1.00	hour/day
Daily Work	223.0	bhp-hr/day
Brake Specific Fuel Consumption [2]	20.8	bhp-hr/gal
Fuel Usage	10.7	gal/day

(1) Assumes all railcars are for delivery.

(2) EPA, Emission Factors for Locomotives, 2009.

Typical Power Distribution by Notch [3]

Notch	Idle	1
Percent of Rated Power	0.6%	4.5%
Average Percentage of Time in Notch	50.0%	50.0%
Average Load Factor		2.5%

(3) Power rating from EPA, Locomotive Emissions Standard Regulatory Support Document, April 1998. Assumes 25% idling and 75% moving time during railcar delivery.

Criteria Pollutant Emissions [4]

	HC	VOC [5]	CO	NOx	SOx [6]	PM10	PM2.5 [7]
Emission Factors (g/bhp-hr)	0.27	0.29	1.83	6.20	0.00	0.16	0.15
Emission Factors (g/gal)	5.70	6.00	38.06	129.00	0.10	3.40	3.13
Emission Factors (lb/gal)	0.01	0.01	0.08	0.28	0.00	0.01	0.01
Peak Hourly Emissions (lb/hr)	**0.07**	**0.07**	**0.45**	**1.52**	**0.00**	**0.04**	**0.04**
Daily Emissions (lb/day)	**0.13**	**0.14**	**0.90**	**3.05**	**0.00**	**0.08**	**0.07**
Annual Emissions (lb/yr) [8]	**42.03**	**44.26**	**280.70**	**951.29**	**0.71**	**25.07**	**23.07**

(4) Emisson factors from the EPA Emission Factors for Locomotive Document, 2009.

(5) VOC emissions scaled from HC emission factors. EPA, Emission Factors for Locomotives, 2009.

(6) Based on 15 ppm S.

(7) PM2.5 emissions scaled from PM10 emissions. POLB, 2013 Air Emissions Inventory, 2014.

(8) Based on 52 weeks of operations with delivereies received 6 days per week.

GHG Emissions [9]

	CO2	CH4	N2O	CO2e [10]
Emission Factors (g/bhp-hr)	491	0.05	0.02	499.57
Emission Factors (g/gal)	10217	1.10	0.49	10391.09
Emission Factors (lb/gal)	22.52	0.00	0.00	22.91
Daily Emissions (lb/day)	241.49	0.03	0.01	245.60
Annual Emissions (lb/yr) [8]	75343.62	8.08	3.59	76627.44
Annual Emissions (MT/yr) [8]	**34.18**	**0.00**	**0.00**	**34.76**

(9) CO2 emission factor from Emission Factors for Locomotives, 2009. CH4 and N2O emissions scaled up from HC and NOx emissions in the POLB 2013 Air Emissions Inventory, 2014.

(10) Based on State global warming potentials.

Table A-25: Additional Project Information

Item #	Project Information
1	Feedstock operations are abated by use of closed systems (no vents to atmosphere), nitrogen blanketing, connections to combustion/incinerations units, and carbon control (similar to current renewable fuels production operations). Based on current renewable fuels production, odors are not expected to reach offsite receptors.
2	2011 baseline emissions of combustion contaminants were obtained from submitted annual emissions reports (AER) and RECLAIM reports.
3	Cooling tower baseline emissions were adjusted from what was reported in the 2011 AER. Values were adjusted to more closely match engineering records which World Energy has for that time period. Revised emissions calculations follow the methodology in AP-42 Chapter 13.4 and use site specific TDS concentrations. The revised cooling tower emissions used in the baseline are less than what was reported in the AER; and thus result in a more conservative CEQA calculation.
4	As requested by SCAQMD, storage tank emissions calculations were prepared based on revised AP-42 Chapter 7 emissions estimation methodologies, and were not prepared using the TANKS 4.09d model.
5	The 40 CFR Part 60 Method 19 natural gas Fd factor of 8710 dscf/mmbtu is used for the calculation of several combustion pollutants. This Fd factor is used in these calculations for both natural gas as renewable fuel gas. As the natural gas Fd factor is greater than the calculated Fd for renewable fuel gas, it provides a conservatively high estimate of emissions from renewable fuel gas.
6	Filter media handling (bleaching earth, filter aid, and silica unloaded, stored, and transferred) are calculated per methodologies prescribed in EPA AP-42 Chapter 11.24: Metallic Minerals Processing (emission factor rating of "C"; average) which were considered more reliable than AP-42 Chapter 11.19.2: Crushed Stone Processing and Pulverized Mineral Processing (emission factor rating of "E"; poor; "…may be reason to suspect that the facilities tested do not represent a random sample of the industry.").
7	H-401 or H-402 are not used in sequence for emissions control. Either incinerator can be used individually, depending on the operational necessity/physical connection of the units. Vent stream concentration and quantities to these incinerators are estimated based on heat and material balances provided by the equipment vendor.
8	Load rack daily throughput is estimated based on the maximum amount of trucks that can be loaded in a day; monthly throughput is based on expected monthly production.
9	Fuel speciation profiles are based on API PUBL 4723-A (2018) – Refinery Stream Composition Data – Update to Speciation Data in API 4723; December 2018; located at apiwebstore.org.
10	Vapor weight fractions of all of the petroleum products are calculated following the methodology prescribed in the June 2020 revision to AP-42 Section 7.1 (equation 40-6).
11	Recovered Oil is estimated to be 12% naphtha, 20% jet, 68% diesel; the composition estimated based on the approximate production rates of each material.
12	Renewable fuel gas stream composition is estimated based on the maximum concentration of lab analysis ratio'd to an approximate composition of 35% RFG to 65% natural gas in the fuel gas system.
13	Storage tanks were grouped together geographically for purposes of modeling health risk of fugitive component emissions. Toxic concentration profile of fugitive component emissions in each group was estimated/weighted based on the number of tanks storing each commodity. For example, if a grouping of tanks included 5 gasoline tanks, 4 diesel tanks, and 1 wastewater tank. The average concentration for each toxic was calculated as [5 gasoline tanks]/[10 total tanks] x [gasoline liquid concentration] + [4 diesel tanks]/[10 total tanks] x [diesel liquid concentration] + [1 wastewater tank]/[10 total tanks] x [wastewater liquid concentration].
14	AltAir estimated the fugitive component emissions using screening values of 500 ppmv and lower. Altair is using lower than 500 ppmv leak rates in the CEQA analysis, and will accept lower leak rate threshold as limiting conditions in the permits to operate.
15	Storage tank total "Pre-Project Count" were obtained from AltAir's current LDAR and heavy liquid component databases. The Storage tank total "Number Removed" and "Number Added" are estimated based on engineering design estimates from the project team for tank farm pumps, piping, and filters. The Storage tank total "Post-Project Count" is calculated as the ("Pre-Project Count" + "Number Added" – "Number Removed") x a safety factor.
16	Onsite truck traffic modeling was performed as follows: HARP converts AERMOD model output based a generic 1 g/s emission rate to ambient air concentrations of each chemical for which an emission rate is provided. The individual volume sources representing the onsite roads where trucks are expected to travel were modeled as a group. When modeling as a group, all of the sources within the group should have a total emission rate of 1 g/s, and HARP treats the group as a single source. AltAir assigned emission rates to the volume sources making up the "TRUCKS" source group so that the total of all the emission rates added up to 1 g/s. In a simple case, for example, if there were 100 volume sources making up the route, each volume source would be given an emission rate of 0.01 g/s. In this CEQA analysis, there were four routes, and each route had a different number of volume sources, and also a different fraction of the total DPM emission rates. Since ALG modeled the trucks as a single source, we had to divide the 1 g/s emissions rate based on number of sources and the relative emissions for each route. The fraction of emissions assigned to each route are as follows: LPG - 11%; Key Rack - 76%; Feed - 10%; Pre-treat - 3%. As such, the 1 g/s total was divided by the above percentages for each of the four routes. The next step was to count the number of volume sources in each route, and then divide by that number. For example, since the LPG route had 11% of the total truck DPM emissions, and there were 86 volume sources that made up the route, the emission rate assigned to each volume source was 0.11 g/s ÷ 86 = 0.00128 g/s. Total DPM is entered into HARP, which is assigned to the group of sources called "TRUCKS". The output from AERMOD for the TRUCKS source group is the sum of the annual average and maximum 1-hr average concentrations from all the volume sources TRK_001 through TRK_247. The difference in methodology between pre-project and post-project modeling, the pre-project modeling treated each "loop" as a separate source, each with a 1 g/s total, while the post-project modeling treated the four loops as a single source. The truck routes differed somewhat between the pre- and post-project scenarios – pre-project had 3 different loops while post-project had 4 different loops. In other words, the pre-project modeling the DPM emissions were distributed among the loops in HARP, while in the post-project the DPM emissions were distributed among the loops in AERMOD.
17	Sour water will be stored in floating roof tanks 12501 and 12502. The toxic speciation profile is estimated based on heat and material balances and engineering estimates. Sour water contains ammonia and H2S; H2S is recovered in the H2S recovery unit and recycled back to the units for required sulfiding of the hydrotreating catalyst. Ammonia is recovered for on-site use for SCRs.
18	Wastewater emissions were estimated using distillate as the speciation profile.
19	Flare Knockout Product T-2014 contains "Feed Solvent." This is unfinished product from the first stage of the renewable fuels process. It is recycled back to the unit with the tallow to reduce the viscosity of the tallow feed going into the unit.
20	Flare knock-out liquid recovery tank emissions are expected to contain light materials; emissions are conservatively estimated using a TVP of 10.99 (max TVP allowed for a floating roof tank).

Table A-25: Additional Project Information

Item #	Project Information
21	New Unit B heaters, H-350 & H-351 will vent to SCR, the new hydrogen generation plant heater, H-151 will vent to SCR, the three existing boilers will go to SCR. Incinerator H-401 is anticipated to need SCR; however we are working with the Rule 1109.1 group to determine what this requirement will be. There are two existing SCRs, one that will be modified if possible, to serve heaters H-350 & H-351, and one that will be modified if possible, to serve the boilers. The SCR for H-151 will be new. Our existing heaters, H-501, H-502, H-101 and H-102 all go to one SCR; however, these heaters and SCR will not be modified for the Project.
22	Since it is possible that some hydrocarbon remains in spent caustic, emissions are estimated assuming the properties of distillate.
23	Project cooling tower drift loss is based on vendor guarantees; total dissolved solids is based on recent years' source test data.
24	Estimated stack flow rates for H-401/402 and H-907/H-908 are based on vendor design data.

ATTACHMENT B. STORAGE TANK EMISSIONS CALCULATIONS

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-10005

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T- 10005	Jan-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Feb-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Mar-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Apr-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	May-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Jun-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Jul-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Aug-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Sep-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Oct-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Nov-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 10005	Dec-20	4,200,000.00	IFR	54.08	420,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	50,400,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	711.27	179.02	2,710.44	0.00	3,600.72
Benzene	00071-43-2	0.00	0.00	0.76	1.05	2.89	0.00	4.69
Cumene	00098-82-8	0.00	0.00	0.00	0.03	0.00	0.00	0.04
Cyclohexane	00110-82-7	0.00	0.00	0.30	0.40	1.13	0.00	1.82
Ethylbenzene	00100-41-4	0.00	0.00	0.05	0.73	0.19	0.00	0.97
Hexane (n)	00110-54-3	0.00	0.00	6.28	5.37	23.92	0.00	35.56
Isooctane	00540-84-1	0.00	0.00	4.16	11.17	15.86	0.00	31.19
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.03	0.12	0.00	0.18
Naphthalene	00091-20-3	0.00	0.00	0.00	0.34	0.00	0.00	0.34
Toluene	00108-88-3	0.00	0.00	0.73	3.46	2.77	0.00	6.96
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.07	5.30	0.28	0.00	5.66
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.74	12.51	2.83	0.00	16.09

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Emissions Report

Tank RFP M-10005
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.83	57.72	58.45	54.00	62.91	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.38	58.28	59.19	54.84	63.53	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.91	60.76	62.03	57.30	66.75	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.25	63.47	65.07	59.76	70.38	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.01	66.95	68.64	63.64	73.64	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.59	70.21	72.01	66.86	77.16	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.80	74.20	76.05	70.60	81.50	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.46	75.52	77.28	71.67	82.89	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.87	73.58	75.02	69.80	80.24	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.61	68.40	69.48	64.83	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.01	62.38	63.23	58.48	67.98	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.81	57.03	57.72	53.27	62.17	4.3	14.68
	Annual	64.51			1,598		65.71	67.01			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1216	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1620	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0983	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8368	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5701	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4069	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3155	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0855	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1448	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0464	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1856	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1008	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8726	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5824	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4396	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3228	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0878	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2383	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0516	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1113	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0158	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0077	86.18
Isooctane	Mar-20	Organic Liquids	0.6319	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5719	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3525	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0222	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0970	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3455	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0578	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3881	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1235	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1791	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0083	86.18
Isooctane	Apr-20	Organic Liquids	0.6888	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0055	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3868	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0250	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1077	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0010	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4809	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0657	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5244	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1393	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3845	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0091	86.18
Isooctane	May-20	Organic Liquids	0.7610	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9213	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4307	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0287	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1217	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6189	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0741	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6631	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1558	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5927	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0099	86.18
Isooctane	Jun-20	Organic Liquids	0.8348	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1237	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4759	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0326	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1362	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7981	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0854	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8427	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1778	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8615	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0109	86.18
Isooctane	Jul-20	Organic Liquids	0.9310	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0074	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3900	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5353	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0379	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1555	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8558	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0891	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9005	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1850	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9477	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9621	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4765	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5546	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0014	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0397	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1619	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7510	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0824	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7955	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1719	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7909	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9057	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0072	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3195	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5196	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0365	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1504	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5144	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0678	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5581	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1433	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4351	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0093	86.18
Isooctane	Oct-20	Organic Liquids	0.7789	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0062	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9702	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4416	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0296	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1252	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2798	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0540	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

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Emissions Report

Tank RFP M-10005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3218	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1160	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0790	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6539	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6310	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3657	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1011	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0989	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1390	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0958	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8019	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0069	86.18
Isooctane	Dec-20	Organic Liquids	0.5581	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3751	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3083	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0834	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-10005
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	60.41	54.56	60.41	58.46	60.41	58.46	60.41	60.41	58.46	60.41	58.46	60.41	711.27
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	14.92	14.92	14.92	14.92	14.92	14.92	14.92	14.92	14.92	14.92	14.92	14.92	179.02
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	230.20	207.92	230.20	222.78	230.20	222.78	230.20	230.20	222.78	230.20	222.78	230.20	2,710.44
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	123.65	123.65	123.65	123.65	123.65	123.65	123.65	123.65	123.65	123.65	123.65	123.65	1,483.80
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	305.53	277.41	305.53	296.15	305.53	296.15	305.53	305.53	296.15	305.53	296.15	305.53	3,600.72

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	8	1.3	227.97
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	5	0.53	58.09
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25001

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T-25001	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25001	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,812.81	0.00	4,004.60
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.98	0.00	6.17
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.16	0.00	2.38
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.20	0.00	1.90
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.70	0.00	43.72
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.37	0.00	46.09
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.23
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.86	0.00	11.44
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.92	0.00	31.89

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25001
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Facility Paramount
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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Facility Paramount
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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

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Facility Paramount
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Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25001
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	238.90	215.78	238.90	231.19	238.90	231.19	238.90	238.90	231.19	238.90	231.19	238.90	2,812.81
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	1,539.84
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	339.47	309.87	339.47	329.60	339.47	329.60	339.47	339.47	329.60	339.47	329.60	339.47	4,004.60

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	341.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	46.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25003

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T-25003	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25003	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,812.81	0.00	4,004.60
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.98	0.00	6.17
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.16	0.00	2.38
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.20	0.00	1.90
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.70	0.00	43.72
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.37	0.00	46.09
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.23
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.86	0.00	11.44
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.92	0.00	31.89

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25003
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25003
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25003
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25003
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25003
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

Emissions Report

Tank	RFP M-25003
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	238.90	215.78	238.90	231.19	238.90	231.19	238.90	238.90	231.19	238.90	231.19	238.90	2,812.81
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	1,539.84
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	339.47	309.87	339.47	329.60	339.47	329.60	339.47	339.47	329.60	339.47	329.60	339.47	4,004.60

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	341.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	46.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25004

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T-25004	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-25004	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,812.81	0.00	4,004.60
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.98	0.00	6.17
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.16	0.00	2.38
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.20	0.00	1.90
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.70	0.00	43.72
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.37	0.00	46.09
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.23
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.86	0.00	11.44
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.92	0.00	31.89

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25004
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25004
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP M-25004
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-25004
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25004
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25004
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	238.90	215.78	238.90	231.19	238.90	231.19	238.90	238.90	231.19	238.90	231.19	238.90	2,812.81
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	1,539.84
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	339.47	309.87	339.47	329.60	339.47	329.60	339.47	339.47	329.60	339.47	329.60	339.47	4,004.60

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	341.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	46.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25005

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T- 25005	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25005	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,823.33	0.00	4,015.12
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.99	0.00	6.18
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.17	0.00	2.38
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.20	0.00	1.90
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.80	0.00	43.81
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.43	0.00	46.15
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.23
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.87	0.00	11.45
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.93	0.00	31.90

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25005

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

Emissions Report

Tank RFP M-25005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-25005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

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Emissions Report

Tank RFP M-25005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25005
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	239.79	216.58	239.79	232.05	239.79	232.05	239.79	239.79	232.05	239.79	232.05	239.79	2,823.33
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.80	128.80	128.80	128.80	128.80	128.80	128.80	128.80	128.80	128.80	128.80	128.80	1,545.60
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	340.37	310.68	340.37	330.47	340.37	330.47	340.37	340.37	330.47	340.37	330.47	340.37	4,015.12

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	14	1.3	398.95
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25009

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T- 25009	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T- 25009	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,755.81	0.00	3,947.60
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.92	0.00	6.11
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.14	0.00	2.36
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.19	0.00	1.89
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.20	0.00	43.21
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.04	0.00	45.76
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.22
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.80	0.00	11.38
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.86	0.00	31.83

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-25009

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25009
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP M-25009
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-25009
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-25009
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-25009
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	234.06	211.40	234.06	226.51	234.06	226.51	234.06	234.06	226.51	234.06	226.51	234.06	2,755.81
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	1,508.64
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	334.63	305.50	334.63	324.92	334.63	324.92	334.63	334.63	324.92	334.63	324.92	334.63	3,947.60

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	10	1.3	284.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	46.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-35001

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T- 35001	Jan-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Feb-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Mar-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Apr-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	May-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Jun-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Jul-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Aug-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Sep-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Oct-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Nov-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T- 35001	Dec-20	14,700,000.00	IFR	80.00	1,470,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	176,400,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	10.66	526.33	66.69	0.00	603.68
Benzene	00071-43-2	0.00	0.00	0.02	0.05	0.12	0.00	0.19
Cumene	00098-82-8	0.00	0.00	0.00	0.31	0.03	0.00	0.35
Cyclohexane	00110-82-7	0.00	0.00	0.43	1.15	2.69	0.00	4.28
Ethylbenzene	00100-41-4	0.00	0.00	0.04	1.15	0.24	0.00	1.43
Hexane (n)	00110-54-3	0.00	0.00	0.01	0.02	0.07	0.00	0.10
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.02	0.00	0.15	0.00	0.18
Isoprene	00078-79-5	0.00	0.00	0.06	0.03	0.36	0.00	0.45
Naphthalene	00091-20-3	0.00	0.00	0.00	0.25	0.00	0.00	0.25
Toluene	00108-88-3	0.00	0.00	0.03	0.29	0.19	0.00	0.51
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.05	6.58	0.29	0.00	6.91
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.10	3.43	0.64	0.00	4.17

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-35001
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.96	57.72	58.44	53.95	62.93	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.48	58.28	59.17	54.80	63.54	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.98	60.76	62.00	57.26	66.74	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.29	63.47	65.04	59.71	70.36	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.03	66.95	68.60	63.60	73.61	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.60	70.21	71.97	66.82	77.12	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.82	74.20	76.01	70.56	81.46	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.50	75.52	77.24	71.62	82.87	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.93	73.58	74.99	69.76	80.22	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.70	68.40	69.46	64.78	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.14	62.38	63.21	58.43	67.99	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.94	57.03	57.71	53.22	62.19	4.3	14.68
	Annual	64.51			1,598		65.71	66.99			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

Tank RFP M-35001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1210	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1615	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0317	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0982	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8360	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.8334	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.1901	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3153	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0855	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0069	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1442	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Feb-20	Organic Liquids	0.0464	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1849	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0323	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1008	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8716	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.3036	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Feb-20	Organic Liquids	7.3091	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3226	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0877	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0071	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2374	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Mar-20	Organic Liquids	0.0516	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2791	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0349	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1112	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0030	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0143	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	238.0262	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Mar-20	Organic Liquids	7.7823	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0048	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3522	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0024	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0034	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0969	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0079	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3442	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0017	78.11
Cumene	Apr-20	Organic Liquids	0.0577	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3868	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0378	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1234	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0034	106.17

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Emissions Report

Tank RFP M-35001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1772	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.7891	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Apr-20	Organic Liquids	8.3151	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0052	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3864	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0026	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0249	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0039	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1076	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0087	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.4794	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	May-20	Organic Liquids	0.0657	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.5229	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0416	84.16
Ethylbenzene	May-20	Organic Liquids	0.1392	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0038	106.17
Hexane (n)	May-20	Organic Liquids	2.3822	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.8908	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	May-20	Organic Liquids	8.9756	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0056	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4302	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0029	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0286	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0045	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1215	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0099	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6172	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0020	78.11
Cumene	Jun-20	Organic Liquids	0.0740	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6614	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0453	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1556	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0042	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5901	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	274.7208	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Jun-20	Organic Liquids	9.6344	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0060	68.12
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4753	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0032	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0326	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0051	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1360	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0111	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7962	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0022	78.11
Cumene	Jul-20	Organic Liquids	0.0853	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8409	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0502	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1775	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0048	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8586	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	290.7020	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Jul-20	Organic Liquids	10.4709	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0065	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5347	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0036	92.14

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Emissions Report

Tank RFP M-35001
Facility Paramount
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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0379	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0059	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1553	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0126	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8540	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Aug-20	Organic Liquids	0.0890	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8987	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0518	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1847	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0050	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9450	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	295.7123	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Aug-20	Organic Liquids	10.7367	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0067	68.12
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5540	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0038	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0396	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0062	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1617	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0131	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7495	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0022	78.11
Cumene	Sep-20	Organic Liquids	0.0823	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7941	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0490	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1718	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0047	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7887	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	286.6011	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Sep-20	Organic Liquids	10.2547	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0064	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5191	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0035	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0365	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0057	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1502	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0122	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5134	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	Oct-20	Organic Liquids	0.0677	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5571	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0425	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1432	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0039	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4336	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	265.1023	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Oct-20	Organic Liquids	9.1394	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0057	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4413	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0030	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0296	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0046	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1251	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0102	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2791	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0539	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-35001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3212	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0361	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1159	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0031	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0780	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.2776	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Nov-20	Organic Liquids	7.9917	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3655	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0036	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1011	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0082	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0984	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1386	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0311	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0957	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0026	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8012	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.3971	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.0732	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0044	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3082	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0029	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0833	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0068	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-35001
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.91	0.82	0.91	0.88	0.91	0.88	0.91	0.91	0.88	0.91	0.88	0.91	10.66
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	526.33
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	5.66	5.12	5.66	5.48	5.66	5.48	5.66	5.66	5.48	5.66	5.48	5.66	66.69
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	300.20	300.20	300.20	300.20	300.20	300.20	300.20	300.20	300.20	300.20	300.20	300.20	3,602.40
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	50.43	49.79	50.43	50.22	50.43	50.22	50.43	50.43	50.22	50.43	50.22	50.43	603.68

		Roof Fitting Loss Factors	
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0.36
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0.62
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	7.33
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	12.44
Roof Leg, IFR-Type (12-in. Length); Adjustable (IFR, EFR, or DEFR)	24	7.9	42.12
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	2.44
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.38

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-50001

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T-50001	Jan-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Feb-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Mar-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Apr-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	May-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Jun-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Jul-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Aug-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Sep-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Oct-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Nov-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50001	Dec-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	1,131.09	591.20	6,430.74	0.00	8,153.03
Benzene	00071-43-2	0.00	0.00	1.20	3.45	6.84	0.00	11.50
Cumene	00098-82-8	0.00	0.00	0.00	0.10	0.01	0.00	0.11
Cyclohexane	00110-82-7	0.00	0.00	0.47	1.31	2.67	0.00	4.44
Ethylbenzene	00100-41-4	0.00	0.00	0.08	2.42	0.45	0.00	2.95
Hexane (n)	00110-54-3	0.00	0.00	9.96	17.74	56.64	0.00	84.34
Isooctane	00540-84-1	0.00	0.00	6.60	36.89	37.54	0.00	81.03
Methyl alcohol	00067-56-1	0.00	0.00	0.05	0.11	0.27	0.00	0.43
Naphthalene	00091-20-3	0.00	0.00	0.00	1.12	0.01	0.00	1.13
Toluene	00108-88-3	0.00	0.00	1.15	11.41	6.57	0.00	19.13
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.12	17.50	0.67	0.00	18.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	1.18	41.32	6.71	0.00	49.21

Print Date: 2/11/2022

Emissions Report

Tank RFP M-50001
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.17	57.72	58.41	53.87	62.95	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.63	58.28	59.14	54.73	63.55	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.08	60.76	61.96	57.19	66.73	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.37	63.47	64.98	59.64	70.32	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.06	66.95	68.54	63.53	73.56	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.61	70.21	71.91	66.76	77.06	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.84	74.20	75.95	70.48	81.41	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.56	75.52	77.18	71.54	82.82	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.04	73.58	74.94	69.68	80.20	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.84	68.40	69.42	64.71	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.34	62.38	63.18	58.35	68.02	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.16	57.03	57.68	53.14	62.22	4.3	14.68
	Annual	64.51			1,598		65.71	66.94			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-50001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1203	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1607	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0981	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8348	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5694	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4050	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3151	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0854	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1432	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0463	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1839	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1007	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8701	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5815	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4373	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3223	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0876	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2359	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0515	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2776	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1110	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0120	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0077	86.18
Isooctane	Mar-20	Organic Liquids	0.6306	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5685	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3517	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0967	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3422	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0576	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3848	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1231	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP M-50001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1741	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0083	86.18
Isooctane	Apr-20	Organic Liquids	0.6871	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7205	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3858	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0249	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1074	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0010	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4771	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0655	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5206	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1389	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3788	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0091	86.18
Isooctane	May-20	Organic Liquids	0.7590	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9158	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4294	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0286	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1213	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6146	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0739	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6587	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1553	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5861	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8325	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1173	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4745	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0325	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1357	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7933	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0851	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8379	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1772	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8542	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0109	86.18
Isooctane	Jul-20	Organic Liquids	0.9284	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3827	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5337	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-50001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0378	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1550	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8511	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0888	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8958	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1844	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9407	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9595	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4694	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5530	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0014	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0395	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1614	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7473	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0822	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7918	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1715	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7854	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9037	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0072	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3140	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5184	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0364	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1500	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5119	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0676	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5556	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1430	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4314	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0093	86.18
Isooctane	Oct-20	Organic Liquids	0.7775	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0062	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9666	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4408	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0295	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1249	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2781	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0539	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

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Emissions Report

Tank RFP M-50001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3201	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1158	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0765	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6530	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6286	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3652	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1010	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0977	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1378	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0956	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8000	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5575	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3734	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3079	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0832	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-50001
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	96.06	86.77	96.06	92.97	96.06	92.97	96.06	96.06	92.97	96.06	92.97	96.06	1,131.09
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	591.20
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	6	6	6	6	6	6	6	6	6	6	6	6	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	546.17	493.32	546.17	528.55	546.17	528.55	546.17	546.17	528.55	546.17	528.55	546.17	6,430.74
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	3,520.44
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	691.50	629.35	691.50	670.79	691.50	670.79	691.50	691.50	670.79	691.50	670.79	691.50	8,153.03

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	6	33	4,340.21
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	10	1.3	284.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	9	0.53	104.56
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-50002

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/ Distillate T-50002	Jan-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Feb-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Mar-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Apr-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	May-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Jun-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Jul-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Aug-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Sep-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Oct-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Nov-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/ Distillate T-50002	Dec-20	21,000,000.00	IFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	1,131.09	591.20	6,430.74	0.00	8,153.03
Benzene	00071-43-2	0.00	0.00	1.20	3.45	6.84	0.00	11.50
Cumene	00098-82-8	0.00	0.00	0.00	0.10	0.01	0.00	0.11
Cyclohexane	00110-82-7	0.00	0.00	0.47	1.31	2.67	0.00	4.44
Ethylbenzene	00100-41-4	0.00	0.00	0.08	2.42	0.45	0.00	2.95
Hexane (n)	00110-54-3	0.00	0.00	9.96	17.74	56.64	0.00	84.34
Isooctane	00540-84-1	0.00	0.00	6.60	36.89	37.54	0.00	81.03
Methyl alcohol	00067-56-1	0.00	0.00	0.05	0.11	0.27	0.00	0.43
Naphthalene	00091-20-3	0.00	0.00	0.00	1.12	0.01	0.00	1.13
Toluene	00108-88-3	0.00	0.00	1.15	11.41	6.57	0.00	19.13
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.12	17.50	0.67	0.00	18.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	1.18	41.32	6.71	0.00	49.21

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Emissions Report

Tank RFP M-50002
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.17	57.72	58.41	53.87	62.95	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.63	58.28	59.14	54.73	63.55	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.08	60.76	61.96	57.19	66.73	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.37	63.47	64.98	59.64	70.32	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.06	66.95	68.54	63.53	73.56	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.61	70.21	71.91	66.76	77.06	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.84	74.20	75.95	70.48	81.41	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.56	75.52	77.18	71.54	82.82	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.04	73.58	74.94	69.68	80.20	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.84	68.40	69.42	64.71	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.34	62.38	63.18	58.35	68.02	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.16	57.03	57.68	53.14	62.22	4.3	14.68
	Annual	64.51			1,598		65.71	66.94			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

Tank RFP M-50002
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1203	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1607	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0981	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8348	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5694	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4050	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3151	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0854	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1432	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0463	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1839	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1007	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8701	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5815	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4373	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3223	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0876	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2359	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0515	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2776	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1110	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0120	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0077	86.18
Isooctane	Mar-20	Organic Liquids	0.6306	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5685	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3517	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0967	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3422	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0576	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3848	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1231	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP M-50002
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1741	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0083	86.18
Isooctane	Apr-20	Organic Liquids	0.6871	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7205	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3858	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0249	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1074	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0010	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4771	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0655	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5206	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1389	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3788	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0091	86.18
Isooctane	May-20	Organic Liquids	0.7590	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9158	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4294	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0286	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1213	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6146	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0739	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6587	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1553	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5861	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8325	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1173	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4745	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0325	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1357	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7933	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0851	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8379	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1772	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8542	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0109	86.18
Isooctane	Jul-20	Organic Liquids	0.9284	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3827	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5337	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-50002
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0378	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1550	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8511	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0888	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8958	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1844	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9407	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9595	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4694	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5530	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0014	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0395	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1614	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7473	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0822	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7918	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1715	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7854	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9037	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0072	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3140	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5184	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0364	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1500	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5119	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0676	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5556	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1430	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4314	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0093	86.18
Isooctane	Oct-20	Organic Liquids	0.7775	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0062	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9666	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4408	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0295	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1249	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2781	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0539	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-50002
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3201	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1158	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0765	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6530	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6286	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3652	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1010	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0977	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1378	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0956	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8000	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5575	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3734	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3079	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0832	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-50002
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	96.06	86.77	96.06	92.97	96.06	92.97	96.06	96.06	92.97	96.06	92.97	96.06	1,131.09
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	49.27	591.20
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	6	6	6	6	6	6	6	6	6	6	6	6	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	546.17	493.32	546.17	528.55	546.17	528.55	546.17	546.17	528.55	546.17	528.55	546.17	6,430.74
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	293.37	3,520.44
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	691.50	629.35	691.50	670.79	691.50	670.79	691.50	691.50	670.79	691.50	670.79	691.50	8,153.03

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	6	33	4,340.21
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	10	1.3	284.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	9	0.53	104.56
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP N-150001
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-150001	Jan-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Feb-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Mar-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Apr-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	May-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Jun-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Jul-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Aug-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Sep-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Oct-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Nov-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-150001	Dec-20	33,600,000.00	VFR	140.00	6,218,298	White/White	Average	0.25	FALSE	Uninsulated
	Annual	403,200,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	8,253.14	1,340.53	0.00	0.00	0.00	0.00	9,593.68
Benzene	00071-43-2	139.42	22.59	0.00	0.00	0.00	0.00	162.01
Cumene	00098-82-8	36.45	5.93	0.00	0.00	0.00	0.00	42.39
Cyclohexane	00110-82-7	3,150.11	510.28	0.00	0.00	0.00	0.00	3,660.39
Ethylbenzene	00100-41-4	286.03	46.49	0.00	0.00	0.00	0.00	332.51
Hexane (n)	00110-54-3	78.79	12.76	0.00	0.00	0.00	0.00	91.54
Hydrogen Sulfide	07783-06-4	177.05	28.53	0.00	0.00	0.00	0.00	205.58
Isoprene	00078-79-5	424.73	68.65	0.00	0.00	0.00	0.00	493.38
Naphthalene	00091-20-3	1.55	0.25	0.00	0.00	0.00	0.00	1.80
Toluene	00108-88-3	220.78	35.83	0.00	0.00	0.00	0.00	256.60
Trimethylbenzene (1,2,4)	00095-63-6	337.56	54.99	0.00	0.00	0.00	0.00	392.55
Xylenes (mixed isomers)	01330-20-7	746.91	121.41	0.00	0.00	0.00	0.00	868.33

Print Date: 2/11/2022

Emissions Report

Tank RFP N-150001
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.67	57.72	58.53	54.12	62.95	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.26	58.28	59.29	54.98	63.61	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.83	60.76	62.17	57.46	66.88	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.19	63.47	65.25	59.95	70.55	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	19.99	66.95	68.83	63.83	73.83	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.58	70.21	72.22	67.07	77.36	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.78	74.20	76.26	70.82	81.71	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.41	75.52	77.48	71.88	83.08	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.79	73.58	75.18	69.99	80.38	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.50	68.40	69.60	64.98	74.23	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	18.86	62.38	63.33	58.61	68.04	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.65	57.03	57.80	53.39	62.21	4.3	14.68
	Annual	64.51			1,598		65.71	67.16			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0068	0.0091	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0070	0.0093	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0088	0.0076	0.0103	0.0027	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0098	0.0082	0.0116	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0110	0.0093	0.0129	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0122	0.0104	0.0144	0.0040	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0139	0.0117	0.0164	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0144	0.0121	0.0171	0.0050	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0134	0.0114	0.0158	0.0044	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0113	0.0097	0.0130	0.0033	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0092	0.0079	0.0107	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0077	0.0066	0.0089	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0106					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0144 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1242	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0453	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1646	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4050	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0985	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8408	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	226.1657	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0255	34.08
Isoprene	Jan-20	Organic Liquids	7.2060	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0572	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3163	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0193	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0858	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1481	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Feb-20	Organic Liquids	0.0466	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1889	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4032	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1012	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8776	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.7192	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0251	34.08
Isoprene	Feb-20	Organic Liquids	7.3291	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0567	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3238	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0199	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0881	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0890	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2432	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0519	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2850	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3963	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1118	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0232	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	238.6247	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Mar-20	Organic Liquids	7.8117	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0550	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3540	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0223	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0975	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3521	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0581	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3948	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3890	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1243	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1892	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	249.5713	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0226	34.08
Isoprene	Apr-20	Organic Liquids	8.3542	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0532	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3889	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0269	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0252	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0400	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1084	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4885	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0662	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5320	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3808	84.16
Ethylbenzene	May-20	Organic Liquids	0.1402	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3959	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	262.7479	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0212	34.08
Isoprene	May-20	Organic Liquids	9.0192	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0512	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4331	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0289	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0410	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1224	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6276	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0747	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6718	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3732	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1569	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Jun-20	Organic Liquids	2.6058	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	275.6692	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0199	34.08
Isoprene	Jun-20	Organic Liquids	9.6836	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0494	68.12
Naphthalene	Jun-20	Organic Liquids	0.0041	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4788	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0265	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0329	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0419	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1371	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8079	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0860	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8525	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3643	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1790	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8760	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	291.7160	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0186	34.08
Isoprene	Jul-20	Organic Liquids	10.5246	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0473	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5386	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0382	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0429	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1566	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8654	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0897	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9101	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3617	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1861	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9619	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	296.6900	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Aug-20	Organic Liquids	10.7887	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0466	68.12
Naphthalene	Aug-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5578	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0400	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1629	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7584	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0829	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8030	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3666	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1729	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.8020	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	287.3841	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0189	34.08
Isoprene	Sep-20	Organic Liquids	10.2959	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0478	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5221	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0367	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1512	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5193	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0681	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5631	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3790	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1439	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4426	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	265.6576	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0209	34.08
Isoprene	Oct-20	Organic Liquids	9.1678	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0508	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4432	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0298	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0412	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1257	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2831	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0542	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3252	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3936	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1164	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0842	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.6844	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0234	34.08
Isoprene	Nov-20	Organic Liquids	8.0118	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0543	68.12
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3668	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0233	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1015	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1013	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0440	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1415	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4068	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0960	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8056	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.7080	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0258	34.08
Isoprene	Dec-20	Organic Liquids	7.0881	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0577	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3091	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0187	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0836	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP N-150001
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	76.76	68.96	91.43	110.10	117.76	129.18	158.53	169.08	141.66	110.41	91.64	75.02	1,340.53
Vapor Space Volume [VV] (ft^3)	453,476	453,476	453,476	453,476	453,476	453,476	453,476	453,476	453,476	453,476	453,476	453,476	
Vapor Space Outage [HVO] (ft)	29.46	29.46	29.46	29.46	29.46	29.46	29.46	29.46	29.46	29.46	29.46	29.46	
Shell Height [HS] (ft)	56	56	56	56	56	56	56	56	56	56	56	56	
Average Liquid Height [HL] (ft)	28	28	28	28	28	28	28	28	28	28	28	28	
Roof Outage [HRO] (ft)	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	
Roof Height [HR] (ft)	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	519.02	519.97	523.25	526.71	530.38	533.90	537.99	539.12	536.46	530.48	523.94	518.24	
Vapor Space Expansion Factor [KE]	0.0302	0.0293	0.0322	0.0365	0.0340	0.0349	0.0369	0.0380	0.0351	0.0311	0.0322	0.0302	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9879	0.9876	0.9864	0.9850	0.9831	0.9813	0.9788	0.9780	0.9795	0.9827	0.9859	0.9882	
Working Losses [LW] (lbs)	525.07	499.03	587.30	629.73	718.89	776.29	895.83	928.47	848.07	736.71	594.59	513.15	8,253.14
Working Loss Turnover (Saturation) Factor [KN]	0.6382	0.5926	0.6382	0.6230	0.6382	0.6230	0.6382	0.6382	0.6230	0.6382	0.6230	0.6382	
Annual Turnovers [N]	64.84	64.84	64.84	64.84	64.84	64.84	64.84	64.84	64.84	64.84	64.84	64.84	
Maximum Liquid Height [HLX] (ft)	55	55	55	55	55	55	55	55	55	55	55	55	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	601.83	567.99	678.73	739.83	836.66	905.47	1,054.36	1,097.56	989.72	847.12	686.23	588.17	9,593.68

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-1000 EST
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Spent Caustic T-1000	Jan-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Feb-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Mar-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Apr-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	May-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Jun-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Jul-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Aug-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Sep-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Oct-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Nov-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-1000	Dec-20	3,150,000.00	VFR	21.50	40,737	White/White	Average	0.25	FALSE	Uninsulated
	Annual	37,800,000.00								

Emissions Summary

		Fixed Roof Tank Losses		Floating Roof Tank Losses				
Chemical Component	CAS Number	Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	Total Emissions (lbs/yr)
Spent caustic, as diesel	-	191.08	7.14	0.00	0.00	0.00	0.00	198.22
Benzene	00071-43-2	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Hexane (n)	00110-54-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	00108-88-3	0.02	0.00	0.00	0.00	0.00	0.00	0.02
Xylenes (mixed isomers)	01330-20-7	0.01	0.00	0.00	0.00	0.00	0.00	0.01

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-1000 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.50	57.72	58.43	53.80	63.06	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.89	58.28	59.16	54.69	63.63	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.25	60.76	61.99	57.18	66.80	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.49	63.47	65.02	59.65	70.40	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.10	66.95	68.59	63.56	73.61	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.64	70.21	71.96	66.80	77.12	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.89	74.20	76.00	70.52	81.47	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.66	75.52	77.23	71.56	82.89	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.20	73.58	74.98	69.68	80.28	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.06	68.40	69.45	64.68	74.21	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.67	62.38	63.20	58.29	68.12	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.51	57.03	57.70	53.07	62.33	4.3	14.68
	Annual	64.51			1,598		65.71	66.98			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Spent caustic, as diesel	Jan-20	Petroleum Distillates	0.0062	0.0053	0.0072	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Apr-20	Petroleum Distillates	0.0076	0.0064	0.0091	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	May-20	Petroleum Distillates	0.0086	0.0073	0.0100	0.0028	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Jun-20	Petroleum Distillates	0.0095	0.0081	0.0112	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Jul-20	Petroleum Distillates	0.0108	0.0091	0.0128	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Aug-20	Petroleum Distillates	0.0112	0.0094	0.0134	0.0039	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Sep-20	Petroleum Distillates	0.0105	0.0089	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Oct-20	Petroleum Distillates	0.0088	0.0076	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0084	0.0023	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0112 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-1000 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Spent caustic, as diesel	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1209	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jan-20	Organic Liquids	1.8357	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jan-20	Organic Liquids	0.3152	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0855	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1440	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Feb-20	Organic Liquids	1.8712	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Feb-20	Organic Liquids	0.3225	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0877	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2370	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Mar-20	Organic Liquids	2.0138	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Mar-20	Organic Liquids	0.3521	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0969	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3438	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Apr-20	Organic Liquids	2.1765	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Apr-20	Organic Liquids	0.3863	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1076	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	May-20							
Benzene	May-20	Organic Liquids	1.4789	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	May-20	Organic Liquids	2.3815	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	May-20	Organic Liquids	0.4300	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1214	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6166	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jun-20	Organic Liquids	2.5892	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jun-20	Organic Liquids	0.4751	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1359	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7956	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jul-20	Organic Liquids	2.8576	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jul-20	Organic Liquids	0.5344	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1553	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8534	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Aug-20	Organic Liquids	2.9440	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Aug-20	Organic Liquids	0.5538	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1616	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Sep-20							

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-1000 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Benzene	Sep-20	Organic Liquids	1.7490	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Sep-20	Organic Liquids	2.7880	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Sep-20	Organic Liquids	0.5189	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1502	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5131	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Oct-20	Organic Liquids	2.4331	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Oct-20	Organic Liquids	0.4412	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1250	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2789	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Nov-20	Organic Liquids	2.0777	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Nov-20	Organic Liquids	0.3654	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1010	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0982	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Dec-20	Organic Liquids	1.8009	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Dec-20	Organic Liquids	0.3081	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0833	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-1000 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	0.42	0.37	0.49	0.58	0.62	0.67	0.83	0.89	0.76	0.60	0.50	0.41	7.14
Vapor Space Volume [VV] (ft^3)	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	
Vapor Space Outage [HVO] (ft)	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	
Shell Height [HS] (ft)	16	16	16	16	16	16	16	16	16	16	16	16	
Average Liquid Height [HL] (ft)	8	8	8	8	8	8	8	8	8	8	8	8	
Roof Outage [HRO] (ft)	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	
Roof Height [HR] (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.81	519.71	522.89	526.25	529.90	533.38	537.46	538.61	536.05	530.17	523.70	518.04	
Vapor Space Expansion Factor [KE]	0.0318	0.0305	0.0330	0.0370	0.0342	0.0349	0.0370	0.0384	0.0358	0.0321	0.0337	0.0318	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9973	0.9973	0.9970	0.9967	0.9963	0.9959	0.9953	0.9951	0.9955	0.9962	0.9969	0.9974	
Working Losses [LW] (lbs)	12.08	12.15	13.47	14.70	16.45	18.09	20.48	21.23	19.79	16.90	13.92	11.80	191.08
Working Loss Turnover (Saturation) Factor [KN]	0.1996	0.1964	0.1996	0.1986	0.1996	0.1986	0.1996	0.1996	0.1986	0.1996	0.1986	0.1996	
Annual Turnovers [N]	927.90	927.90	927.90	927.90	927.90	927.90	927.90	927.90	927.90	927.90	927.90	927.90	
Maximum Liquid Height [HLX] (ft)	15	15	15	15	15	15	15	15	15	15	15	15	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	12.50	12.53	13.96	15.28	17.07	18.77	21.31	22.13	20.55	17.50	14.42	12.22	198.22

Print Date: 2/11/2022

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10001 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Wastewater T-10001	Jan-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Feb-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Mar-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Apr-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	May-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Jun-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Jul-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Aug-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Sep-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Oct-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Nov-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10001	Dec-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Wastewater, as diesel	-	0.00	0.00	0.46	587.55	2.27	0.00	590.28
Benzene	00071-43-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumene	00098-82-8	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Cyclohexane	00110-82-7	0.00	0.00	0.01	0.05	0.05	0.00	0.11
Ethylbenzene	00100-41-4	0.00	0.00	0.00	0.08	0.01	0.00	0.08
Hexane (n)	00110-54-3	0.00	0.00	0.07	0.22	0.34	0.00	0.62
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Isooctane	00540-84-1	0.00	0.00	0.05	0.45	0.23	0.00	0.72
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	00091-20-3	0.00	0.00	0.00	0.04	0.00	0.00	0.04
Toluene	00108-88-3	0.00	0.00	0.01	0.16	0.04	0.00	0.21
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.00	0.46	0.01	0.00	0.47
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.01	0.63	0.05	0.00	0.69

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10001 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.85	57.72	58.33	53.62	63.04	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.15	58.28	59.04	54.50	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.42	60.76	61.81	56.96	66.67	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.62	63.47	64.80	59.40	70.20	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.15	66.95	68.35	63.32	73.39	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.66	70.21	71.71	66.54	76.87	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.93	74.20	75.74	70.25	81.22	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.76	75.52	76.98	71.29	82.67	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.38	73.58	74.78	69.43	80.12	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.30	68.40	69.30	64.47	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.02	62.38	63.09	58.08	68.09	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.88	57.03	57.61	52.89	62.32	4.3	14.68
	Annual	64.51			1,598		65.71	66.79			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Wastewater, as diesel	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Apr-20	Petroleum Distillates	0.0076	0.0064	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jun-20	Petroleum Distillates	0.0095	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Aug-20	Petroleum Distillates	0.0111	0.0093	0.0133	0.0039	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0084	0.0023	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0111 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Wastewater, as diesel	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1177	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jan-20	Organic Liquids	0.0449	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1581	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0236	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0978	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8308	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1589	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.4732	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Jan-20	Organic Liquids	0.5681	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1033	114.23
Isoprene	Jan-20	Organic Liquids	7.1728	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4014	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3142	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1400	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1806	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0235	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1003	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8651	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1582	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.8532	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Feb-20	Organic Liquids	0.5798	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1030	114.23
Isoprene	Feb-20	Organic Liquids	7.2873	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4328	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3213	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0198	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0873	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2311	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Mar-20	Organic Liquids	0.0512	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2727	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0231	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1105	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0047	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1551	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.3781	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Mar-20	Organic Liquids	0.6280	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1019	114.23
Isoprene	Mar-20	Organic Liquids	7.7505	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5616	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3502	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0963	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3357	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Apr-20	Organic Liquids	0.0572	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3782	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0227	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1224	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1642	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1520	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	247.9423	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0026	34.08
Isooctane	Apr-20	Organic Liquids	0.6836	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1006	114.23
Isoprene	Apr-20	Organic Liquids	8.2728	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7111	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3836	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0196	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0247	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0037	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1067	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0219	106.17
Wastewater, as diesel	May-20							
Benzene	May-20	Organic Liquids	1.4697	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	May-20	Organic Liquids	0.0651	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	May-20	Organic Liquids	1.5131	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0223	84.16
Ethylbenzene	May-20	Organic Liquids	0.1380	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	May-20	Organic Liquids	2.3675	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1483	86.18
Hydrogen Sulfide	May-20	Organic Liquids	260.9630	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	May-20	Organic Liquids	0.7550	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0991	114.23
Isoprene	May-20	Organic Liquids	8.9284	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	May-20	Organic Liquids	1.9049	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4270	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0195	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1205	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0220	106.17
Wastewater, as diesel	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6060	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jun-20	Organic Liquids	0.0733	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6501	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0218	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1543	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5732	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1449	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.6944	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0023	34.08
Isooctane	Jun-20	Organic Liquids	0.8279	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0977	114.23
Isoprene	Jun-20	Organic Liquids	9.5813	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1046	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4716	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0193	92.14

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Emissions Report

Tank RFP NM-10001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0322	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1348	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0222	106.17
Wastewater, as diesel	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7837	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jul-20	Organic Liquids	0.0845	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8283	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0213	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1760	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8399	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1409	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.6046	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Jul-20	Organic Liquids	0.9232	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0960	114.23
Isoprene	Jul-20	Organic Liquids	10.4130	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3684	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5305	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0375	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1540	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8417	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Aug-20	Organic Liquids	0.0882	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8864	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0212	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1832	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9267	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1397	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.6540	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Aug-20	Organic Liquids	0.9545	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0955	114.23
Isoprene	Aug-20	Organic Liquids	10.6804	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4554	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5499	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0191	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1603	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0224	106.17
Wastewater, as diesel	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7399	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Sep-20	Organic Liquids	0.0817	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7845	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0214	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1706	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7744	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1419	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.7532	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0022	34.08
Isooctane	Sep-20	Organic Liquids	0.8997	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0964	114.23
Isoprene	Sep-20	Organic Liquids	10.2101	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3031	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Sep-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17

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Emissions Report

Tank RFP NM-10001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5159	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1492	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5070	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Oct-20	Organic Liquids	0.0673	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5507	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0221	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1424	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4240	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1473	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.5007	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	Oct-20	Organic Liquids	0.7749	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0987	114.23
Isoprene	Oct-20	Organic Liquids	9.1086	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9594	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4392	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0194	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1244	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0221	106.17
Wastewater, as diesel	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2748	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3168	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0230	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1154	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0714	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1538	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.8367	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Nov-20	Organic Liquids	0.6512	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1013	114.23
Isoprene	Nov-20	Organic Liquids	7.9699	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6239	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3641	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1006	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0953	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Dec-20	Organic Liquids	0.0437	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1354	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0237	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7964	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1597	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.0602	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Dec-20	Organic Liquids	0.5562	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1037	114.23
Isoprene	Dec-20	Organic Liquids	7.0571	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3701	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3072	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10001 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.04	0.03	0.03	0.46
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	587.55
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	0.14	0.13	0.16	0.17	0.20	0.21	0.25	0.26	0.24	0.20	0.16	0.14	2.27
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	1,490.16
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	49.13	49.12	49.16	49.17	49.20	49.22	49.26	49.28	49.25	49.21	49.16	49.13	590.28

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0.03
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0.05
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	0.60
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1.02
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	8	1.3	0.19
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	0.06
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	0.20
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	0.11

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10006 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-10006	Jan-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Feb-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Mar-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Apr-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	May-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Jun-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Jul-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Aug-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Sep-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Oct-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Nov-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10006	Dec-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
	Annual	50,400,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	600.08	97.20	0.00	0.00	0.00	0.00	697.28
Benzene	00071-43-2	10.14	1.64	0.00	0.00	0.00	0.00	11.78
Cumene	00098-82-8	2.65	0.43	0.00	0.00	0.00	0.00	3.08
Cyclohexane	00110-82-7	229.11	37.01	0.00	0.00	0.00	0.00	266.12
Ethylbenzene	00100-41-4	20.80	3.37	0.00	0.00	0.00	0.00	24.17
Hexane (n)	00110-54-3	5.73	0.93	0.00	0.00	0.00	0.00	6.66
Hydrogen Sulfide	07783-06-4	12.88	2.07	0.00	0.00	0.00	0.00	14.95
Isoprene	00078-79-5	30.90	4.98	0.00	0.00	0.00	0.00	35.88
Naphthalene	00091-20-3	0.11	0.02	0.00	0.00	0.00	0.00	0.13
Toluene	00108-88-3	16.05	2.60	0.00	0.00	0.00	0.00	18.65
Trimethylbenzene (1,2,4)	00095-63-6	24.54	3.99	0.00	0.00	0.00	0.00	28.52
Xylenes (mixed isomers)	01330-20-7	54.30	8.80	0.00	0.00	0.00	0.00	63.11

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10006 EST

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.83	57.72	58.52	54.06	62.97	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.38	58.28	59.27	54.92	63.61	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.91	60.76	62.14	57.41	66.86	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.25	63.47	65.21	59.90	70.52	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.01	66.95	68.79	63.78	73.79	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.59	70.21	72.17	67.02	77.32	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.80	74.20	76.21	70.76	81.66	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.46	75.52	77.43	71.82	83.05	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.87	73.58	75.15	69.93	80.36	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.61	68.40	69.58	64.92	74.23	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.01	62.38	63.30	58.55	68.05	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.81	57.03	57.78	53.33	62.23	4.3	14.68
	Annual	64.51			1,598		65.71	67.13			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0068	0.0091	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0070	0.0093	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0088	0.0076	0.0103	0.0027	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0098	0.0082	0.0116	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0110	0.0093	0.0128	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0122	0.0104	0.0143	0.0040	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0139	0.0117	0.0164	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0144	0.0121	0.0171	0.0050	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0134	0.0114	0.0158	0.0044	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0112	0.0097	0.0130	0.0033	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0092	0.0079	0.0107	0.0029	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0077	0.0066	0.0089	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0106					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0144 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1235	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0453	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1640	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4051	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0985	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8398	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	226.1005	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0255	34.08
Isoprene	Jan-20	Organic Liquids	7.2029	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0572	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3161	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0857	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1474	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Feb-20	Organic Liquids	0.0466	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1881	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4032	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1011	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8764	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.6376	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0252	34.08
Isoprene	Feb-20	Organic Liquids	7.3252	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0568	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3236	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0880	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0890	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2421	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0518	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2838	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3964	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1117	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0215	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	238.5072	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Mar-20	Organic Liquids	7.8060	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0550	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3537	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0223	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0974	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3506	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0580	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3932	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3891	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1241	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Emissions Report

Tank RFP NM-10006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1869	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	249.4177	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0226	34.08
Isoprene	Apr-20	Organic Liquids	8.3465	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0532	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3884	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0251	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0400	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1083	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4867	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0661	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5302	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3809	84.16
Ethylbenzene	May-20	Organic Liquids	0.1400	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3932	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	262.5796	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0212	34.08
Isoprene	May-20	Organic Liquids	9.0106	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0512	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4326	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0288	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0410	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1223	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6256	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0746	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6698	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3733	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1566	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Jun-20	Organic Liquids	2.6027	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	275.4830	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0200	34.08
Isoprene	Jun-20	Organic Liquids	9.6739	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0494	68.12
Naphthalene	Jun-20	Organic Liquids	0.0041	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4781	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0265	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0328	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0419	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1369	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8056	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0859	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8502	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3644	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1787	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8726	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	291.5169	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0186	34.08
Isoprene	Jul-20	Organic Liquids	10.5141	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0473	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5378	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Emissions Report

Tank RFP NM-10006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0382	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0429	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1564	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8631	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0896	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9078	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3618	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1859	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9586	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	296.4980	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Aug-20	Organic Liquids	10.7785	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0467	68.12
Naphthalene	Aug-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5570	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0399	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1627	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7567	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0828	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8012	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3667	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1726	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7994	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	287.2304	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0190	34.08
Isoprene	Sep-20	Organic Liquids	10.2878	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0478	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5215	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0367	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1510	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5182	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0680	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5619	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3791	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1438	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4408	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	265.5486	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0209	34.08
Isoprene	Oct-20	Organic Liquids	9.1622	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0508	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4428	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0297	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0412	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1255	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2824	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0541	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Emissions Report

Tank RFP NM-10006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3244	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3936	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1163	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0830	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.6046	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0234	34.08
Isoprene	Nov-20	Organic Liquids	8.0079	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0543	68.12
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3665	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0233	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1014	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1007	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0440	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1409	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4068	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0960	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8047	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.6470	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0259	34.08
Isoprene	Dec-20	Organic Liquids	7.0852	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0577	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3089	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0187	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0835	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10006 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	5.58	5.01	6.62	7.96	8.51	9.34	11.48	12.26	10.29	8.02	6.67	5.46	97.20
Vapor Space Volume [VV] (ft^3)	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	
Vapor Space Outage [HVO] (ft)	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	
Shell Height [HS] (ft)	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	
Average Liquid Height [HL] (ft)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	
Roof Outage [HRO] (ft)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	
Roof Height [HR] (ft)	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.98	519.92	523.18	526.62	530.29	533.80	537.89	539.02	536.39	530.43	523.90	518.20	
Vapor Space Expansion Factor [KE]	0.0305	0.0296	0.0323	0.0366	0.0340	0.0349	0.0369	0.0381	0.0352	0.0313	0.0324	0.0305	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9941	0.9940	0.9934	0.9927	0.9918	0.9909	0.9897	0.9893	0.9900	0.9916	0.9931	0.9943	
Working Losses [LW] (lbs)	38.07	36.89	42.56	45.91	52.08	56.59	64.90	67.27	61.84	53.40	43.37	37.20	600.08
Working Loss Turnover (Saturation) Factor [KN]	0.3704	0.3507	0.3704	0.3638	0.3704	0.3638	0.3704	0.3704	0.3638	0.3704	0.3638	0.3704	
Annual Turnovers [N]	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	
Maximum Liquid Height [HLX] (ft)	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	43.65	41.89	49.18	53.87	60.59	65.93	76.38	79.53	72.13	61.42	50.04	42.66	697.28

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10007 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-10007	Jan-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Feb-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Mar-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Apr-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	May-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Jun-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Jul-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Aug-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Sep-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Oct-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Nov-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10007	Dec-20	4,200,000.00	VFR	54.00	335,788	White/White	Average	0.25	FALSE	Uninsulated
	Annual	50,400,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	600.08	97.20	0.00	0.00	0.00	0.00	697.28
Benzene	00071-43-2	10.14	1.64	0.00	0.00	0.00	0.00	11.78
Cumene	00098-82-8	2.65	0.43	0.00	0.00	0.00	0.00	3.08
Cyclohexane	00110-82-7	229.11	37.01	0.00	0.00	0.00	0.00	266.12
Ethylbenzene	00100-41-4	20.80	3.37	0.00	0.00	0.00	0.00	24.17
Hexane (n)	00110-54-3	5.73	0.93	0.00	0.00	0.00	0.00	6.66
Hydrogen Sulfide	07783-06-4	12.88	2.07	0.00	0.00	0.00	0.00	14.95
Isoprene	00078-79-5	30.90	4.98	0.00	0.00	0.00	0.00	35.88
Naphthalene	00091-20-3	0.11	0.02	0.00	0.00	0.00	0.00	0.13
Toluene	00108-88-3	16.05	2.60	0.00	0.00	0.00	0.00	18.65
Trimethylbenzene (1,2,4)	00095-63-6	24.54	3.99	0.00	0.00	0.00	0.00	28.52
Xylenes (mixed isomers)	01330-20-7	54.30	8.80	0.00	0.00	0.00	0.00	63.11

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10007 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.83	57.72	58.52	54.06	62.97	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.38	58.28	59.27	54.92	63.61	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.91	60.76	62.14	57.41	66.86	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.25	63.47	65.21	59.90	70.52	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.01	66.95	68.79	63.78	73.79	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.59	70.21	72.17	67.02	77.32	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.80	74.20	76.21	70.76	81.66	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.46	75.52	77.43	71.82	83.05	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.87	73.58	75.15	69.93	80.36	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.61	68.40	69.58	64.92	74.23	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.01	62.38	63.30	58.55	68.05	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.81	57.03	57.78	53.33	62.23	4.3	14.68
	Annual	64.51			1,598		65.71	67.13			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0068	0.0091	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0070	0.0093	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0088	0.0076	0.0103	0.0027	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0098	0.0082	0.0116	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0110	0.0093	0.0128	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0122	0.0104	0.0143	0.0040	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0139	0.0117	0.0164	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0144	0.0121	0.0171	0.0050	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0134	0.0114	0.0158	0.0044	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0112	0.0097	0.0130	0.0033	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0092	0.0079	0.0107	0.0029	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0077	0.0066	0.0089	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0106					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0144 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1235	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0453	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1640	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4051	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0985	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8398	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	226.1005	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0255	34.08
Isoprene	Jan-20	Organic Liquids	7.2029	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0572	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3161	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0857	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1474	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Feb-20	Organic Liquids	0.0466	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1881	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4032	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1011	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8764	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.6376	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0252	34.08
Isoprene	Feb-20	Organic Liquids	7.3252	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0568	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3236	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0880	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0890	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2421	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0518	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2838	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3964	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1117	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0215	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	238.5072	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Mar-20	Organic Liquids	7.8060	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0550	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3537	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0223	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0974	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3506	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0580	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3932	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3891	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1241	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Emissions Report

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1869	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	249.4177	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0226	34.08
Isoprene	Apr-20	Organic Liquids	8.3465	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0532	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3884	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0251	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0400	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1083	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4867	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0661	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5302	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3809	84.16
Ethylbenzene	May-20	Organic Liquids	0.1400	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3932	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	262.5796	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0212	34.08
Isoprene	May-20	Organic Liquids	9.0106	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0512	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4326	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0288	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0410	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1223	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6256	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0746	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6698	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3733	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1566	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Jun-20	Organic Liquids	2.6027	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	275.4830	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0200	34.08
Isoprene	Jun-20	Organic Liquids	9.6739	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0494	68.12
Naphthalene	Jun-20	Organic Liquids	0.0041	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4781	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0265	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0328	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0419	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1369	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8056	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0859	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8502	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3644	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1787	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8726	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	291.5169	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0186	34.08
Isoprene	Jul-20	Organic Liquids	10.5141	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0473	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5378	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0382	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0429	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1564	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8631	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0896	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9078	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3618	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1859	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9586	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	296.4980	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Aug-20	Organic Liquids	10.7785	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0467	68.12
Naphthalene	Aug-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5570	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0399	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1627	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7567	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0828	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8012	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3667	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1726	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7994	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	287.2304	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0190	34.08
Isoprene	Sep-20	Organic Liquids	10.2878	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0478	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5215	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0367	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1510	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5182	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0680	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5619	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3791	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1438	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4408	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	265.5486	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0209	34.08
Isoprene	Oct-20	Organic Liquids	9.1622	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0508	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4428	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0297	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0412	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1255	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2824	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0541	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3244	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3936	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1163	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0830	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.6046	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0234	34.08
Isoprene	Nov-20	Organic Liquids	8.0079	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0543	68.12
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3665	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0233	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1014	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1007	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0440	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1409	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4068	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0960	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8047	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.6470	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0259	34.08
Isoprene	Dec-20	Organic Liquids	7.0852	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0577	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3089	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0187	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0835	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10007 EST

Facility Paramount

Site Location Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	5.58	5.01	6.62	7.96	8.51	9.34	11.48	12.26	10.29	8.02	6.67	5.46	97.20
Vapor Space Volume [VV] (ft^3)	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	32,481	
Vapor Space Outage [HVO] (ft)	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	14.18	
Shell Height [HS] (ft)	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42	
Average Liquid Height [HL] (ft)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	
Roof Outage [HRO] (ft)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	
Roof Height [HR] (ft)	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.98	519.92	523.18	526.62	530.29	533.80	537.89	539.02	536.39	530.43	523.90	518.20	
Vapor Space Expansion Factor [KE]	0.0305	0.0296	0.0323	0.0366	0.0340	0.0349	0.0369	0.0381	0.0352	0.0313	0.0324	0.0305	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9941	0.9940	0.9934	0.9927	0.9918	0.9909	0.9897	0.9893	0.9900	0.9916	0.9931	0.9943	
Working Losses [LW] (lbs)	38.07	36.89	42.56	45.91	52.08	56.59	64.90	67.27	61.84	53.40	43.37	37.20	600.08
Working Loss Turnover (Saturation) Factor [KN]	0.3704	0.3507	0.3704	0.3638	0.3704	0.3638	0.3704	0.3704	0.3638	0.3704	0.3638	0.3704	
Annual Turnovers [N]	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	150.09	
Maximum Liquid Height [HLX] (ft)	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	43.65	41.89	49.18	53.87	60.59	65.93	76.38	79.53	72.13	61.42	50.04	42.66	697.28

Print Date: 2/11/2022

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10008 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-10008	Jan-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Feb-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Mar-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Apr-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	May-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Jun-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Jul-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Aug-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Sep-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Oct-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Nov-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-10008	Dec-20	4,200,000.00	VFR	39.00	357,446	White/White	Average	0.25	FALSE	Uninsulated
	Annual	50,400,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	615.28	106.42	0.00	0.00	0.00	0.00	721.70
Benzene	00071-43-2	10.42	1.80	0.00	0.00	0.00	0.00	12.21
Cumene	00098-82-8	2.71	0.47	0.00	0.00	0.00	0.00	3.18
Cyclohexane	00110-82-7	235.40	40.64	0.00	0.00	0.00	0.00	276.05
Ethylbenzene	00100-41-4	21.31	3.69	0.00	0.00	0.00	0.00	25.00
Hexane (n)	00110-54-3	5.89	1.02	0.00	0.00	0.00	0.00	6.91
Hydrogen Sulfide	07783-06-4	13.29	2.29	0.00	0.00	0.00	0.00	15.58
Isoprene	00078-79-5	31.80	5.48	0.00	0.00	0.00	0.00	37.28
Naphthalene	00091-20-3	0.11	0.02	0.00	0.00	0.00	0.00	0.13
Toluene	00108-88-3	16.47	2.85	0.00	0.00	0.00	0.00	19.32
Trimethylbenzene (1,2,4)	00095-63-6	25.10	4.35	0.00	0.00	0.00	0.00	29.45
Xylenes (mixed isomers)	01330-20-7	55.64	9.63	0.00	0.00	0.00	0.00	65.27

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10008 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	19.26	57.72	58.33	53.52	63.15	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.46	58.28	59.04	54.43	63.66	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.63	60.76	61.82	56.92	66.73	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.76	63.47	64.81	59.37	70.25	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.20	66.95	68.37	63.32	73.42	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.68	70.21	71.72	66.55	76.89	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.99	74.20	75.75	70.26	81.25	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.88	75.52	77.00	71.28	82.72	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.58	73.58	74.79	69.39	80.18	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.57	68.40	69.31	64.41	74.20	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.42	62.38	63.09	57.99	68.20	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	19.30	57.03	57.61	52.79	62.44	4.3	14.68
	Annual	64.51			1,598		65.71	66.80			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0066	0.0091	0.0025	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0068	0.0093	0.0025	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0087	0.0074	0.0103	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0096	0.0081	0.0115	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0108	0.0092	0.0127	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0120	0.0102	0.0142	0.0039	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0137	0.0115	0.0162	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0142	0.0119	0.0169	0.0051	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0133	0.0112	0.0157	0.0045	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0111	0.0095	0.0130	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0091	0.0077	0.0108	0.0031	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0076	0.0065	0.0089	0.0025	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0105					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0142 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1179	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0449	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1583	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4055	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8311	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.4937	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0256	34.08
Isoprene	Jan-20	Organic Liquids	7.1737	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0573	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3143	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1402	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1809	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4038	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1003	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8654	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.8789	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0253	34.08
Isoprene	Feb-20	Organic Liquids	7.2886	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0569	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3213	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0889	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2314	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0512	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2730	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3971	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1105	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0052	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.4151	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0240	34.08
Isoprene	Mar-20	Organic Liquids	7.7524	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0552	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3503	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0391	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0963	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0894	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3362	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0572	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3787	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3901	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1225	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Emissions Report

Tank RFP NM-10008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1649	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	247.9906	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0227	34.08
Isoprene	Apr-20	Organic Liquids	8.2753	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0535	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3838	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0247	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0399	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1068	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4702	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0651	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5137	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3819	84.16
Ethylbenzene	May-20	Organic Liquids	0.1381	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3683	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.0159	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0213	34.08
Isoprene	May-20	Organic Liquids	8.9311	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0514	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4272	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0268	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0409	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1205	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0905	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6066	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0734	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6508	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3743	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1544	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5742	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.7529	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0201	34.08
Isoprene	Jun-20	Organic Liquids	9.5843	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0496	68.12
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4719	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0266	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0417	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1349	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7844	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0845	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8290	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3654	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1761	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8409	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.6672	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0188	34.08
Isoprene	Jul-20	Organic Liquids	10.4163	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0475	68.12
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5307	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Emissions Report

Tank RFP NM-10008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0375	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0428	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1540	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0916	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8424	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0883	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8871	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3627	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1833	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9277	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.7144	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0184	34.08
Isoprene	Aug-20	Organic Liquids	10.6836	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0469	68.12
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5501	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0431	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1604	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7405	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0817	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7850	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3675	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1707	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7752	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.8016	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0191	34.08
Isoprene	Sep-20	Organic Liquids	10.2126	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0480	68.12
Naphthalene	Sep-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5161	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0425	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1493	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5074	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0673	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5510	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3797	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1425	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4245	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.5351	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0210	34.08
Isoprene	Oct-20	Organic Liquids	9.1104	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0509	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4393	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0411	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1244	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2750	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3170	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3941	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0718	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.8619	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0235	34.08
Isoprene	Nov-20	Organic Liquids	7.9712	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0545	68.12
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3642	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1006	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0955	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0437	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1356	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4073	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7967	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.0794	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0259	34.08
Isoprene	Dec-20	Organic Liquids	7.0580	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0578	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3073	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0886	106.17

APT 1.0

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10008 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	6.46	5.68	7.29	8.61	9.04	9.85	12.15	13.14	11.23	8.97	7.65	6.34	106.42
Vapor Space Volume [VV] (ft^3)	34,830	34,830	34,830	34,830	34,830	34,830	34,830	34,830	34,830	34,830	34,830	34,830	
Vapor Space Outage [HVO] (ft)	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	
Shell Height [HS] (ft)	49.75	49.75	49.75	49.75	49.75	49.75	49.75	49.75	49.75	49.75	49.75	49.75	
Average Liquid Height [HL] (ft)	21	21	21	21	21	21	21	21	21	21	21	21	
Roof Outage [HRO] (ft)	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	
Roof Height [HR] (ft)	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.62	519.48	522.56	525.83	529.46	532.91	536.98	538.15	535.67	529.89	523.48	517.86	
Vapor Space Expansion Factor [KE]	0.0333	0.0317	0.0337	0.0376	0.0344	0.0351	0.0373	0.0389	0.0366	0.0332	0.0352	0.0334	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9881	0.9878	0.9867	0.9853	0.9836	0.9817	0.9793	0.9785	0.9799	0.9831	0.9861	0.9884	
Working Losses [LW] (lbs)	39.21	37.88	43.67	46.98	53.30	57.84	66.36	68.83	63.37	54.88	44.62	38.33	615.28
Working Loss Turnover (Saturation) Factor [KN]	0.3835	0.3625	0.3835	0.3765	0.3835	0.3765	0.3835	0.3835	0.3765	0.3835	0.3765	0.3835	
Annual Turnovers [N]	141.00	141.00	141.00	141.00	141.00	141.00	141.00	141.00	141.00	141.00	141.00	141.00	
Maximum Liquid Height [HLX] (ft)	41	41	41	41	41	41	41	41	41	41	41	41	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	45.67	43.56	50.96	55.59	62.34	67.69	78.52	81.97	74.61	63.85	52.27	44.67	721.70

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APT 1.0

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-10009 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Wastewater T-10009	Jan-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Feb-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Mar-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Apr-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	May-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Jun-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Jul-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Aug-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Sep-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Oct-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Nov-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-10009	Dec-20	8,400,000.00	IFR	42.00	420,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Wastewater, as diesel	-	0.00	0.00	0.46	587.55	2.27	0.00	590.28
Benzene	00071-43-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumene	00098-82-8	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Cyclohexane	00110-82-7	0.00	0.00	0.01	0.05	0.05	0.00	0.11
Ethylbenzene	00100-41-4	0.00	0.00	0.00	0.08	0.01	0.00	0.08
Hexane (n)	00110-54-3	0.00	0.00	0.07	0.22	0.34	0.00	0.62
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Isooctane	00540-84-1	0.00	0.00	0.05	0.45	0.23	0.00	0.72
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	00091-20-3	0.00	0.00	0.00	0.04	0.00	0.00	0.04
Toluene	00108-88-3	0.00	0.00	0.01	0.16	0.04	0.00	0.21
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.00	0.46	0.01	0.00	0.47
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.01	0.63	0.05	0.00	0.69

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10009 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.85	57.72	58.33	53.62	63.04	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.15	58.28	59.04	54.50	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.42	60.76	61.81	56.96	66.67	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.62	63.47	64.80	59.40	70.20	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.15	66.95	68.35	63.32	73.39	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.66	70.21	71.71	66.54	76.87	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.93	74.20	75.74	70.25	81.22	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.76	75.52	76.98	71.29	82.67	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.38	73.58	74.78	69.43	80.12	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.30	68.40	69.30	64.47	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.02	62.38	63.09	58.08	68.09	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.88	57.03	57.61	52.89	62.32	4.3	14.68
	Annual	64.51			1,598		65.71	66.79			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Wastewater, as diesel	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Apr-20	Petroleum Distillates	0.0076	0.0064	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jun-20	Petroleum Distillates	0.0095	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Aug-20	Petroleum Distillates	0.0111	0.0093	0.0133	0.0039	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0084	0.0023	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0111 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10009 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Wastewater, as diesel	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1177	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jan-20	Organic Liquids	0.0449	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1581	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0236	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0978	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8308	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1589	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.4732	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Jan-20	Organic Liquids	0.5681	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1033	114.23
Isoprene	Jan-20	Organic Liquids	7.1728	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4014	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3142	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1400	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1806	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0235	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1003	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8651	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1582	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.8532	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Feb-20	Organic Liquids	0.5798	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1030	114.23
Isoprene	Feb-20	Organic Liquids	7.2873	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4328	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3213	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0198	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0873	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2311	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Mar-20	Organic Liquids	0.0512	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2727	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0231	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1105	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0047	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1551	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.3781	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Mar-20	Organic Liquids	0.6280	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1019	114.23
Isoprene	Mar-20	Organic Liquids	7.7505	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5616	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3502	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19

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Emissions Report

Tank RFP NM-10009 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0963	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3357	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Apr-20	Organic Liquids	0.0572	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3782	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0227	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1224	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1642	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1520	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	247.9423	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0026	34.08
Isooctane	Apr-20	Organic Liquids	0.6836	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1006	114.23
Isoprene	Apr-20	Organic Liquids	8.2728	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7111	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3836	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0196	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0247	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0037	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1067	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0219	106.17
Wastewater, as diesel	May-20							
Benzene	May-20	Organic Liquids	1.4697	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	May-20	Organic Liquids	0.0651	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	May-20	Organic Liquids	1.5131	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0223	84.16
Ethylbenzene	May-20	Organic Liquids	0.1380	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	May-20	Organic Liquids	2.3675	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1483	86.18
Hydrogen Sulfide	May-20	Organic Liquids	260.9630	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	May-20	Organic Liquids	0.7550	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0991	114.23
Isoprene	May-20	Organic Liquids	8.9284	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	May-20	Organic Liquids	1.9049	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4270	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0195	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1205	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0220	106.17
Wastewater, as diesel	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6060	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jun-20	Organic Liquids	0.0733	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6501	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0218	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1543	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5732	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1449	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.6944	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0023	34.08
Isooctane	Jun-20	Organic Liquids	0.8279	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0977	114.23
Isoprene	Jun-20	Organic Liquids	9.5813	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1046	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4716	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0193	92.14

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Emissions Report

Tank RFP NM-10009 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0322	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1348	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0222	106.17
Wastewater, as diesel	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7837	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jul-20	Organic Liquids	0.0845	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8283	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0213	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1760	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8399	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1409	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.6046	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Jul-20	Organic Liquids	0.9232	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0960	114.23
Isoprene	Jul-20	Organic Liquids	10.4130	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3684	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5305	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0375	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1540	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8417	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Aug-20	Organic Liquids	0.0882	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8864	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0212	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1832	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9267	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1397	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.6540	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Aug-20	Organic Liquids	0.9545	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0955	114.23
Isoprene	Aug-20	Organic Liquids	10.6804	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4554	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5499	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0191	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1603	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0224	106.17
Wastewater, as diesel	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7399	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Sep-20	Organic Liquids	0.0817	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7845	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0214	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1706	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7744	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1419	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.7532	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0022	34.08
Isooctane	Sep-20	Organic Liquids	0.8997	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0964	114.23
Isoprene	Sep-20	Organic Liquids	10.2101	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3031	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Sep-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-10009 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5159	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1492	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5070	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Oct-20	Organic Liquids	0.0673	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5507	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0221	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1424	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4240	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1473	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.5007	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	Oct-20	Organic Liquids	0.7749	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0987	114.23
Isoprene	Oct-20	Organic Liquids	9.1086	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9594	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4392	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0194	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1244	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0221	106.17
Wastewater, as diesel	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2748	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3168	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0230	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1154	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0714	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1538	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.8367	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Nov-20	Organic Liquids	0.6512	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1013	114.23
Isoprene	Nov-20	Organic Liquids	7.9699	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6239	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3641	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1006	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0953	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Dec-20	Organic Liquids	0.0437	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1354	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0237	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7964	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1597	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.0602	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Dec-20	Organic Liquids	0.5562	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1037	114.23
Isoprene	Dec-20	Organic Liquids	7.0571	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3701	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04

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Emissions Report

Tank RFP NM-10009 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3072	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-10009 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.04	0.03	0.03	0.46
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	587.55
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	0.14	0.13	0.16	0.17	0.20	0.21	0.25	0.26	0.24	0.20	0.16	0.14	2.27
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	124.18	1,490.16
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	49.13	49.12	49.16	49.17	49.20	49.22	49.26	49.28	49.25	49.21	49.16	49.13	590.28

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0.03
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0.05
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	0.60
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1.02
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	8	1.3	0.19
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	0.06
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	0.20
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	0.11

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-12501 EST
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Sour Water T-12501	Jan-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Feb-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Mar-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Apr-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	May-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Jun-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Jul-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Aug-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Sep-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Oct-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Nov-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12501	Dec-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 3)	-	0.00	0.00	57.55	495.08	116.97	0.00	669.59
Benzene	00071-43-2	0.00	0.00	0.03	0.37	0.06	0.00	0.45
Cumene	00098-82-8	0.00	0.00	0.00	0.12	0.00	0.00	0.12
Cyclohexane	00110-82-7	0.00	0.00	0.03	0.43	0.07	0.00	0.53
Ethylbenzene	00100-41-4	0.00	0.00	0.00	0.65	0.01	0.00	0.66
Hexane (n)	00110-54-3	0.00	0.00	0.21	1.82	0.44	0.00	2.47
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Isooctane	00540-84-1	0.00	0.00	0.14	3.82	0.29	0.00	4.25
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Naphthalene	00091-20-3	0.00	0.00	0.00	0.31	0.00	0.00	0.31
Toluene	00108-88-3	0.00	0.00	0.03	1.33	0.06	0.00	1.41
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.01	3.87	0.01	0.00	3.89
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.03	5.32	0.06	0.00	5.42

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-12501 EST

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 3)	Jan-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Feb-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Mar-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Apr-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	May-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Jun-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Jul-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Aug-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Sep-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Oct-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Nov-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Dec-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
	Annual		3.0000					70.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 3.0000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 3)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5488	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Jan-20	Organic Liquids	7.1764	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.9477	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0020	114.23
Isoprene	Feb-20	Organic Liquids	7.2919	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0032	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.5141	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0021	114.23
Isoprene	Mar-20	Organic Liquids	7.7572	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0035	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.1200	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0023	114.23
Isoprene	Apr-20	Organic Liquids	8.2817	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0038	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.1576	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	May-20	Organic Liquids	8.9383	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0042	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.9097	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0028	114.23
Isoprene	Jun-20	Organic Liquids	9.5924	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0046	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.8349	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0031	114.23
Isoprene	Jul-20	Organic Liquids	10.4251	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0047	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.8761	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0032	114.23
Isoprene	Aug-20	Organic Liquids	10.6922	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0008	106.17
Gasoline (TVP 3)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0045	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.9311	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0030	114.23
Isoprene	Sep-20	Organic Liquids	10.2194	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17

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Emissions Report

Tank RFP NM-12501 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0039	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.6270	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	Oct-20	Organic Liquids	9.1151	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0033	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.9293	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0022	114.23
Isoprene	Nov-20	Organic Liquids	7.9745	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0029	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.1309	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Dec-20	Organic Liquids	7.0605	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04

Print Date: 2/11/2022

Emissions Report

Tank	RFP NM-12501 EST
Facility	Paramount
Site Location	Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-12501 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	4.89	4.41	4.89	4.73	4.89	4.73	4.89	4.89	4.73	4.89	4.73	4.89	57.55
Primary Rim Seal	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Vapor Pressure Function [P*]	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	495.08
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	0	0	0	0	0	0	0	0	0	0	0	0	
Effective Column Diameter [FC] (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Fitting Losses [LF] (lbs)	9.93	8.97	9.93	9.61	9.93	9.61	9.93	9.93	9.61	9.93	9.61	9.93	116.97
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	351.24
Vapor Molecular Weight (lb/lbmol)	70	70	70	70	70	70	70	70	70	70	70	70	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	56.08	54.64	56.08	55.60	56.08	55.60	56.08	56.08	55.60	56.08	55.60	56.08	669.59

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	6.39
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	11.19
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	19	0.53	40.24
Unslotted Guide-Pole Well; Gasketed Sliding Cover, w. Sleeve (IFR, EFR, or DEFR)	1	8.6	34.37
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	24.78

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-12502 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Sour Water T-12502	Jan-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Feb-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Mar-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Apr-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	May-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Jun-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Jul-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Aug-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Sep-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Oct-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Nov-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
Sour Water T-12502	Dec-20	10,500,000.00	IFR	48.00	525,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 3)	-	0.00	0.00	57.55	495.08	116.97	0.00	669.59
Benzene	00071-43-2	0.00	0.00	0.03	0.37	0.06	0.00	0.45
Cumene	00098-82-8	0.00	0.00	0.00	0.12	0.00	0.00	0.12
Cyclohexane	00110-82-7	0.00	0.00	0.03	0.43	0.07	0.00	0.53
Ethylbenzene	00100-41-4	0.00	0.00	0.00	0.65	0.01	0.00	0.66
Hexane (n)	00110-54-3	0.00	0.00	0.21	1.82	0.44	0.00	2.47
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Isooctane	00540-84-1	0.00	0.00	0.14	3.82	0.29	0.00	4.25
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Naphthalene	00091-20-3	0.00	0.00	0.00	0.31	0.00	0.00	0.31
Toluene	00108-88-3	0.00	0.00	0.03	1.33	0.06	0.00	1.41
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.01	3.87	0.01	0.00	3.89
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.03	5.32	0.06	0.00	5.42

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 3)	Jan-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Feb-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Mar-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Apr-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	May-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Jun-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Jul-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Aug-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Sep-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Oct-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Nov-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Dec-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
	Annual		3.0000					70.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 3.0000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 3)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5488	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Jan-20	Organic Liquids	7.1764	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.9477	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0020	114.23
Isoprene	Feb-20	Organic Liquids	7.2919	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0032	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.5141	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0021	114.23
Isoprene	Mar-20	Organic Liquids	7.7572	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19

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Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0035	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.1200	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0023	114.23
Isoprene	Apr-20	Organic Liquids	8.2817	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0038	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.1576	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	May-20	Organic Liquids	8.9383	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0042	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.9097	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0028	114.23
Isoprene	Jun-20	Organic Liquids	9.5924	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14

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Emissions Report

Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0046	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.8349	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0031	114.23
Isoprene	Jul-20	Organic Liquids	10.4251	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0047	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.8761	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0032	114.23
Isoprene	Aug-20	Organic Liquids	10.6922	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0008	106.17
Gasoline (TVP 3)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0045	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.9311	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0030	114.23
Isoprene	Sep-20	Organic Liquids	10.2194	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17

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Emissions Report

Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0039	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.6270	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	Oct-20	Organic Liquids	9.1151	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0033	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.9293	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0022	114.23
Isoprene	Nov-20	Organic Liquids	7.9745	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0029	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.1309	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Dec-20	Organic Liquids	7.0605	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-12502 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-12502 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	4.89	4.41	4.89	4.73	4.89	4.73	4.89	4.89	4.73	4.89	4.73	4.89	57.55
Primary Rim Seal	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Vapor Pressure Function [P*]	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	41.26	495.08
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	0	0	0	0	0	0	0	0	0	0	0	0	
Effective Column Diameter [FC] (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Fitting Losses [LF] (lbs)	9.93	8.97	9.93	9.61	9.93	9.61	9.93	9.93	9.61	9.93	9.61	9.93	116.97
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	29.27	351.24
Vapor Molecular Weight (lb/lbmol)	70	70	70	70	70	70	70	70	70	70	70	70	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	56.08	54.64	56.08	55.60	56.08	55.60	56.08	56.08	55.60	56.08	55.60	56.08	669.59

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	6.39
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	11.19
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	19	0.53	40.24
Unslotted Guide-Pole Well; Gasketed Sliding Cover, w. Sleeve (IFR, EFR, or DEFR)	1	8.6	34.37
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	24.78

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-20003 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-20003	Jan-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Feb-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Mar-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Apr-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	May-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Jun-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Jul-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Aug-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Sep-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Oct-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Nov-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20003	Dec-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	36.43	396.06	18.02	0.00	450.51
Benzene	00071-43-2	0.00	0.00	0.07	0.04	0.03	0.00	0.14
Cumene	00098-82-8	0.00	0.00	0.02	0.23	0.01	0.00	0.26
Cyclohexane	00110-82-7	0.00	0.00	1.55	0.87	0.76	0.00	3.18
Ethylbenzene	00100-41-4	0.00	0.00	0.14	0.86	0.07	0.00	1.08
Hexane (n)	00110-54-3	0.00	0.00	0.04	0.01	0.02	0.00	0.07
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.09	0.00	0.04	0.00	0.13
Isoprene	00078-79-5	0.00	0.00	0.21	0.02	0.10	0.00	0.33
Naphthalene	00091-20-3	0.00	0.00	0.00	0.19	0.00	0.00	0.19
Toluene	00108-88-3	0.00	0.00	0.11	0.22	0.05	0.00	0.38
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.17	4.95	0.08	0.00	5.20
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.37	2.58	0.18	0.00	3.14

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-20003 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.35	58.41	59.24	54.66	63.83	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.77	59.13	60.17	55.73	64.62	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.17	61.95	63.40	58.61	68.19	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.43	64.97	66.81	61.45	72.17	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.08	68.53	70.47	65.45	75.49	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.63	71.90	73.97	68.81	79.12	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.87	75.93	78.06	72.59	83.53	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.61	77.17	79.19	73.54	84.85	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.13	74.93	76.59	71.31	81.87	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.96	69.41	70.66	65.92	75.40	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.52	63.18	64.15	59.27	69.03	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.35	57.68	58.47	53.88	63.06	4.3	14.68
	Annual	64.51			1,598		66.93	68.43			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-20003 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1466	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0465	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1873	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0324	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1010	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8753	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	228.5592	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.3214	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Jan-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3234	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0880	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0071	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1765	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Feb-20	Organic Liquids	0.0482	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2176	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0332	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1044	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0028	106.17
Hexane (n)	Feb-20	Organic Liquids	1.9212	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	231.7158	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Feb-20	Organic Liquids	7.4743	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0047	68.12
Naphthalene	Feb-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3328	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0023	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0206	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0032	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0909	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0074	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2858	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Mar-20	Organic Liquids	0.0543	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.3279	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0362	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1167	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0032	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0882	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	242.9484	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Mar-20	Organic Liquids	8.0249	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Mar-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3676	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0234	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0036	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1017	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0083	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.4100	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	Apr-20	Organic Liquids	0.0615	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Apr-20	Organic Liquids	1.4531	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0397	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1310	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0036	106.17

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Emissions Report

Tank RFP NM-20003 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.2771	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	255.2333	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Apr-20	Organic Liquids	8.6383	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0054	68.12
Naphthalene	Apr-20	Organic Liquids	0.0032	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.4076	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0028	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0267	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0042	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1143	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0093	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.5546	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	May-20	Organic Liquids	0.0702	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.5985	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0436	84.16
Ethylbenzene	May-20	Organic Liquids	0.1481	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0040	106.17
Hexane (n)	May-20	Organic Liquids	2.4958	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	May-20	Organic Liquids	268.9545	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	May-20	Organic Liquids	9.3369	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	May-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4548	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0308	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1294	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0105	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.7038	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0021	78.11
Cumene	Jun-20	Organic Liquids	0.0794	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jun-20	Organic Liquids	1.7482	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0477	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1662	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0045	106.17
Hexane (n)	Jun-20	Organic Liquids	2.7202	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	282.5402	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Jun-20	Organic Liquids	10.0416	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0063	68.12
Naphthalene	Jun-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.5039	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0034	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0351	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0055	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1453	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0118	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8931	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Jul-20	Organic Liquids	0.0915	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Jul-20	Organic Liquids	1.9378	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0529	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1896	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0052	106.17
Hexane (n)	Jul-20	Organic Liquids	3.0033	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	299.0629	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Jul-20	Organic Liquids	10.9153	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0068	68.12
Naphthalene	Jul-20	Organic Liquids	0.0052	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5671	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0038	92.14

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Emissions Report

Tank RFP NM-20003 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0408	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0064	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1660	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0135	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.9486	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Aug-20	Organic Liquids	0.0952	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9933	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0544	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1966	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0053	106.17
Hexane (n)	Aug-20	Organic Liquids	3.0859	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	303.7699	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Aug-20	Organic Liquids	11.1674	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0070	68.12
Naphthalene	Aug-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5857	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0040	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0426	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0066	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1722	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0140	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.8232	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Sep-20	Organic Liquids	0.0870	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8678	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0510	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1809	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0049	106.17
Hexane (n)	Sep-20	Organic Liquids	2.8989	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	293.0447	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Sep-20	Organic Liquids	10.5950	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0066	68.12
Naphthalene	Sep-20	Organic Liquids	0.0049	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5437	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0387	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0060	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1583	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0129	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5623	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	Oct-20	Organic Liquids	0.0707	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6062	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0438	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1490	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0040	106.17
Hexane (n)	Oct-20	Organic Liquids	2.5074	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	269.6641	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Oct-20	Organic Liquids	9.3733	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	Oct-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4573	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0310	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1302	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3123	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0558	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

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Emissions Report

Tank RFP NM-20003 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3547	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0370	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1197	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17
Hexane (n)	Nov-20	Organic Liquids	2.1286	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	245.6163	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Nov-20	Organic Liquids	8.1571	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0051	68.12
Naphthalene	Nov-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3761	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0241	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0038	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1044	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0085	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1221	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0452	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1625	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0317	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0983	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8376	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	225.9463	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.1955	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3156	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0856	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0070	106.17

APT 1.0

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-20003 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	2.72	2.70	3.21	3.42	3.40	3.29	3.40	3.31	3.02	2.81	2.54	2.63	36.43
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Tank Construction	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Wind Speed Dependent Rim Seal Loss Factor (lbmol/mph^n ft yr)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Seal-Related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	396.06
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	1.43	1.36	1.56	1.59	1.61	1.56	1.61	1.59	1.49	1.45	1.36	1.40	18.02
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	75.74	79.66	82.88	87.33	85.43	85.43	85.43	84.15	81.59	77.05	74.42	74.42	973.53
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Fitting Wind Speed Correction Factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Wind Speed (mph)	4.5	5.1	5.6	6.3	6	6	6	5.8	5.4	4.7	4.3	4.3	
Total Losses (lbs)	37.15	37.06	37.78	38.02	38.01	37.85	38.01	37.90	37.52	37.27	36.91	37.04	450.51

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	KFb (lbmol/(yr mph^n)	m	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0	0	0.36
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0	0	0.62
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.02	0.97	0.12
Rim Vent; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.71	0.1	1	0.24
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	0.08	0.65	3.97
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	0.11	0.13	0.88
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	9.9	0.89	9.54
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.2	0.94	2.30

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-20004 EST
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-20004	Jan-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Feb-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Mar-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Apr-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	May-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Jun-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Jul-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Aug-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Sep-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Oct-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Nov-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20004	Dec-20	8,400,000.00	EFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	36.43	396.06	18.02	0.00	450.51
Benzene	00071-43-2	0.00	0.00	0.07	0.04	0.03	0.00	0.14
Cumene	00098-82-8	0.00	0.00	0.02	0.23	0.01	0.00	0.26
Cyclohexane	00110-82-7	0.00	0.00	1.55	0.87	0.76	0.00	3.18
Ethylbenzene	00100-41-4	0.00	0.00	0.14	0.86	0.07	0.00	1.08
Hexane (n)	00110-54-3	0.00	0.00	0.04	0.01	0.02	0.00	0.07
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.09	0.00	0.04	0.00	0.13
Isoprene	00078-79-5	0.00	0.00	0.21	0.02	0.10	0.00	0.33
Naphthalene	00091-20-3	0.00	0.00	0.00	0.19	0.00	0.00	0.19
Toluene	00108-88-3	0.00	0.00	0.11	0.22	0.05	0.00	0.38
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.17	4.95	0.08	0.00	5.20
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.37	2.58	0.18	0.00	3.14

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Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.35	58.41	59.24	54.66	63.83	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.77	59.13	60.17	55.73	64.62	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.17	61.95	63.40	58.61	68.19	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.43	64.97	66.81	61.45	72.17	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.08	68.53	70.47	65.45	75.49	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.63	71.90	73.97	68.81	79.12	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.87	75.93	78.06	72.59	83.53	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.61	77.17	79.19	73.54	84.85	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.13	74.93	76.59	71.31	81.87	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.96	69.41	70.66	65.92	75.40	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.52	63.18	64.15	59.27	69.03	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.35	57.68	58.47	53.88	63.06	4.3	14.68
	Annual	64.51			1,598		66.93	68.43			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1466	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0465	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1873	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0324	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1010	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8753	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	228.5592	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.3214	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Jan-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3234	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0880	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0071	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1765	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Feb-20	Organic Liquids	0.0482	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2176	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0332	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1044	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0028	106.17
Hexane (n)	Feb-20	Organic Liquids	1.9212	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	231.7158	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Feb-20	Organic Liquids	7.4743	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0047	68.12
Naphthalene	Feb-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3328	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0023	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0206	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0032	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0909	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0074	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2858	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Mar-20	Organic Liquids	0.0543	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.3279	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0362	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1167	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0032	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0882	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	242.9484	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Mar-20	Organic Liquids	8.0249	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Mar-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3676	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0234	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0036	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1017	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0083	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.4100	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	Apr-20	Organic Liquids	0.0615	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Apr-20	Organic Liquids	1.4531	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0397	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1310	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0036	106.17

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.2771	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	255.2333	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Apr-20	Organic Liquids	8.6383	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0054	68.12
Naphthalene	Apr-20	Organic Liquids	0.0032	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.4076	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0028	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0267	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0042	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1143	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0093	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.5546	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	May-20	Organic Liquids	0.0702	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.5985	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0436	84.16
Ethylbenzene	May-20	Organic Liquids	0.1481	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0040	106.17
Hexane (n)	May-20	Organic Liquids	2.4958	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	May-20	Organic Liquids	268.9545	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	May-20	Organic Liquids	9.3369	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	May-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4548	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0308	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1294	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0105	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.7038	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0021	78.11
Cumene	Jun-20	Organic Liquids	0.0794	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jun-20	Organic Liquids	1.7482	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0477	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1662	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0045	106.17
Hexane (n)	Jun-20	Organic Liquids	2.7202	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	282.5402	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Jun-20	Organic Liquids	10.0416	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0063	68.12
Naphthalene	Jun-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.5039	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0034	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0351	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0055	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1453	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0118	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8931	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Jul-20	Organic Liquids	0.0915	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Jul-20	Organic Liquids	1.9378	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0529	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1896	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0052	106.17
Hexane (n)	Jul-20	Organic Liquids	3.0033	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	299.0629	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Jul-20	Organic Liquids	10.9153	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0068	68.12
Naphthalene	Jul-20	Organic Liquids	0.0052	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5671	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0038	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0408	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0064	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1660	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0135	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.9486	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Aug-20	Organic Liquids	0.0952	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9933	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0544	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1966	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0053	106.17
Hexane (n)	Aug-20	Organic Liquids	3.0859	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	303.7699	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Aug-20	Organic Liquids	11.1674	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0070	68.12
Naphthalene	Aug-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5857	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0040	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0426	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0066	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1722	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0140	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.8232	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Sep-20	Organic Liquids	0.0870	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8678	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0510	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1809	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0049	106.17
Hexane (n)	Sep-20	Organic Liquids	2.8989	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	293.0447	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Sep-20	Organic Liquids	10.5950	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0066	68.12
Naphthalene	Sep-20	Organic Liquids	0.0049	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5437	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0387	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0060	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1583	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0129	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5623	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	Oct-20	Organic Liquids	0.0707	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6062	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0438	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1490	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0040	106.17
Hexane (n)	Oct-20	Organic Liquids	2.5074	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	269.6641	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Oct-20	Organic Liquids	9.3733	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	Oct-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4573	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0310	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1302	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3123	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0558	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-20004 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3547	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0370	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1197	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17
Hexane (n)	Nov-20	Organic Liquids	2.1286	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	245.6163	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Nov-20	Organic Liquids	8.1571	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0051	68.12
Naphthalene	Nov-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3761	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0241	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0038	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1044	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0085	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1221	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0452	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1625	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0317	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0983	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8376	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	225.9463	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.1955	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3156	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0856	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0070	106.17

Emissions Report

Tank	RFP NM-20004 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	2.72	2.70	3.21	3.42	3.40	3.29	3.40	3.31	3.02	2.81	2.54	2.63	36.43
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Tank Construction	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Wind Speed Dependent Rim Seal Loss Factor (lbmol/mph^n ft yr)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Seal-Related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	396.06
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	1.43	1.36	1.56	1.59	1.61	1.56	1.61	1.59	1.49	1.45	1.36	1.40	18.02
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	75.74	79.66	82.88	87.33	85.43	85.43	85.43	84.15	81.59	77.05	74.42	74.42	973.53
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Fitting Wind Speed Correction Factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Wind Speed (mph)	4.5	5.1	5.6	6.3	6	6	6	5.8	5.4	4.7	4.3	4.3	
Total Losses (lbs)	37.15	37.06	37.78	38.02	38.01	37.85	38.01	37.90	37.52	37.27	36.91	37.04	450.51

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	KFb (lbmol/(yr mph^n)	m	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0	0	0.36
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0	0	0.62
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.02	0.97	0.12
Rim Vent; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.71	0.1	1	0.24
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	0.08	0.65	3.97
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	0.11	0.13	0.88
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	9.9	0.89	9.54
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.2	0.94	2.30

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-20005
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-20005	Jan-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Feb-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Mar-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Apr-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	May-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Jun-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Jul-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Aug-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Sep-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Oct-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Nov-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-20005	Dec-20	8,400,000.00	IFR	60.00	840,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	8.00	402.66	28.51	0.00	439.16
Benzene	00071-43-2	0.00	0.00	0.01	0.04	0.05	0.00	0.11
Cumene	00098-82-8	0.00	0.00	0.00	0.24	0.01	0.00	0.25
Cyclohexane	00110-82-7	0.00	0.00	0.32	0.88	1.15	0.00	2.35
Ethylbenzene	00100-41-4	0.00	0.00	0.03	0.88	0.10	0.00	1.01
Hexane (n)	00110-54-3	0.00	0.00	0.01	0.01	0.03	0.00	0.05
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.02	0.00	0.06	0.00	0.08
Isoprene	00078-79-5	0.00	0.00	0.04	0.02	0.16	0.00	0.22
Naphthalene	00091-20-3	0.00	0.00	0.00	0.19	0.00	0.00	0.19
Toluene	00108-88-3	0.00	0.00	0.02	0.22	0.08	0.00	0.32
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.03	5.03	0.12	0.00	5.19
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.08	2.63	0.27	0.00	2.97

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-20005

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.35	57.72	58.39	53.80	62.98	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.77	58.28	59.11	54.67	63.55	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.17	60.76	61.92	57.13	66.71	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.43	63.47	64.93	59.57	70.29	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.08	66.95	68.49	63.47	73.51	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.63	70.21	71.85	66.70	77.01	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.87	74.20	75.89	70.42	81.36	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.61	75.52	77.13	71.48	82.78	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.13	73.58	74.90	69.61	80.18	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.96	68.40	69.39	64.65	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.52	62.38	63.16	58.28	68.04	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.35	57.03	57.66	53.07	62.25	4.3	14.68
	Annual	64.51			1,598		65.71	66.90			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-20005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1196	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1600	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0317	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0980	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8337	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.6751	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.1825	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3148	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0854	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0069	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1423	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Feb-20	Organic Liquids	0.0463	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1830	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0323	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1006	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8687	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.1056	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Feb-20	Organic Liquids	7.2995	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3220	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0876	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0071	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2346	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Mar-20	Organic Liquids	0.0514	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2763	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0348	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1109	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0030	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0101	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.7413	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Mar-20	Organic Liquids	7.7684	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0048	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3513	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0024	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0034	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0966	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0079	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3405	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0017	78.11
Cumene	Apr-20	Organic Liquids	0.0575	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3830	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0377	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1229	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17

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Emissions Report

Tank RFP M-20005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1715	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.4168	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Apr-20	Organic Liquids	8.2965	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0052	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3852	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0026	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0039	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1072	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0087	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.4751	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	May-20	Organic Liquids	0.0654	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.5186	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0414	84.16
Ethylbenzene	May-20	Organic Liquids	0.1387	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0038	106.17
Hexane (n)	May-20	Organic Liquids	2.3757	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.4829	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	May-20	Organic Liquids	8.9548	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0056	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4288	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0029	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0285	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0044	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1211	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0098	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6123	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0020	78.11
Cumene	Jun-20	Organic Liquids	0.0737	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6564	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0452	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1550	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0042	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5827	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	274.2696	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Jun-20	Organic Liquids	9.6110	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0060	68.12
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4737	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0032	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0324	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0050	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1355	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0110	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7907	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0022	78.11
Cumene	Jul-20	Organic Liquids	0.0849	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8353	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0501	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1769	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0048	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8504	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	290.2195	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Jul-20	Organic Liquids	10.4454	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0065	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5328	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0036	92.14

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Emissions Report

Tank RFP M-20005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0377	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0059	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1547	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0126	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8486	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Aug-20	Organic Liquids	0.0887	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8933	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0517	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1841	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0050	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9369	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	295.2470	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Aug-20	Organic Liquids	10.7119	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0067	68.12
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5522	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0395	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0061	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1611	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0131	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7453	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0022	78.11
Cumene	Sep-20	Organic Liquids	0.0820	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7898	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0488	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1712	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0047	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7824	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	286.2284	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Sep-20	Organic Liquids	10.2351	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0064	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5177	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0035	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0363	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0057	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1498	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0122	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5106	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	Oct-20	Organic Liquids	0.0675	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5543	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0424	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1429	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0039	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4294	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.8379	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Oct-20	Organic Liquids	9.1259	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0057	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4404	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0030	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0295	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0046	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1248	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0101	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2772	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0538	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

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Emissions Report

Tank RFP M-20005
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3192	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0360	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1157	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0031	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0751	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.0838	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Nov-20	Organic Liquids	7.9821	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3649	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0036	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1009	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0082	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0970	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1372	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0310	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0956	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0026	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7991	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.2491	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.0661	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0044	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3077	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0029	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0832	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0068	106.17

APT 1.0

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-20005
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.68	0.61	0.68	0.66	0.68	0.66	0.68	0.68	0.66	0.68	0.66	0.68	8.00
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	2.42	2.19	2.42	2.34	2.42	2.34	2.42	2.42	2.34	2.42	2.34	2.42	28.51
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	1,539.84
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	36.66	36.36	36.66	36.56	36.66	36.56	36.66	36.66	36.56	36.66	36.56	36.66	439.16

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0.36
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0.62
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	7.33
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	12.44
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	3.47
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	0.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	2.44
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.38

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-242 EST
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Spent Caustic T-242	Jan-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Feb-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Mar-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Apr-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	May-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Jun-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Jul-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Aug-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Sep-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Oct-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Nov-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
Spent Caustic T-242	Dec-20	2,520,000.00	VFR	10.50	8,421	White/White	Average	0.25	FALSE	Uninsulated
	Annual	30,240,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Spent caustic, as diesel	-	133.61	1.61	0.00	0.00	0.00	0.00	135.22
Benzene	00071-43-2	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Hexane (n)	00110-54-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	00108-88-3	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-242 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	19.41	57.72	58.32	53.46	63.17	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.57	58.28	59.02	54.38	63.66	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.70	60.76	61.79	56.87	66.72	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.82	63.47	64.77	59.32	70.23	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.22	66.95	68.32	63.27	73.38	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.69	70.21	71.67	66.50	76.85	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	22.01	74.20	75.70	70.20	81.21	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.93	75.52	76.95	71.22	82.68	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.66	73.58	74.75	69.34	80.17	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.68	68.40	69.28	64.36	74.20	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.57	62.38	63.07	57.93	68.21	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	19.46	57.03	57.59	52.73	62.46	4.3	14.68
	Annual	64.51			1,598		65.71	66.77			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Spent caustic, as diesel	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0020	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Mar-20	Petroleum Distillates	0.0069	0.0058	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Apr-20	Petroleum Distillates	0.0076	0.0063	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0028	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Jun-20	Petroleum Distillates	0.0094	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Aug-20	Petroleum Distillates	0.0111	0.0093	0.0133	0.0040	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0085	0.0024	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Spent caustic, as diesel	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0082					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0111 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-242 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Spent caustic, as diesel	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1173	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jan-20	Organic Liquids	1.8302	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jan-20	Organic Liquids	0.3141	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0851	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1395	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Feb-20	Organic Liquids	1.8643	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Feb-20	Organic Liquids	0.3211	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0873	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2303	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Mar-20	Organic Liquids	2.0035	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Mar-20	Organic Liquids	0.3499	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0962	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3346	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Apr-20	Organic Liquids	2.1626	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Apr-20	Organic Liquids	0.3833	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1066	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	May-20							
Benzene	May-20	Organic Liquids	1.4685	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	May-20	Organic Liquids	2.3657	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	May-20	Organic Liquids	0.4266	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1204	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6046	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jun-20	Organic Liquids	2.5712	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jun-20	Organic Liquids	0.4712	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1347	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7822	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Jul-20	Organic Liquids	2.8376	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Jul-20	Organic Liquids	0.5300	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1538	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8402	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Aug-20	Organic Liquids	2.9244	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Aug-20	Organic Liquids	0.5494	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1602	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Sep-20							

Emissions Report

Tank RFP NM-242 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Benzene	Sep-20	Organic Liquids	1.7388	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Sep-20	Organic Liquids	2.7726	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Sep-20	Organic Liquids	0.5155	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1491	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5062	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Oct-20	Organic Liquids	2.4228	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Oct-20	Organic Liquids	0.4389	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1243	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2742	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Nov-20	Organic Liquids	2.0706	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Nov-20	Organic Liquids	0.3639	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1006	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17
Spent caustic, as diesel	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0949	A=6.906, B=1211, C=220.79	78.11	1.5E-07	0.0000	78.11
Hexane (n)	Dec-20	Organic Liquids	1.7958	A=6.878, B=1171.5, C=224.37	86.18	7.11E-09	0.0000	86.18
Toluene	Dec-20	Organic Liquids	0.3071	A=7.017, B=1377.6, C=222.64	92.14	1.27E-06	0.0001	92.14
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	1.79E-06	0.0000	106.17

Emissions Report

Tank	RFP NM-242 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	0.10	0.09	0.11	0.13	0.14	0.15	0.18	0.20	0.17	0.14	0.12	0.10	1.61
Vapor Space Volume [VV] (ft^3)	659	659	659	659	659	659	659	659	659	659	659	659	
Vapor Space Outage [HVO] (ft)	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	
Shell Height [HS] (ft)	15	15	15	15	15	15	15	15	15	15	15	15	
Average Liquid Height [HL] (ft)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	
Roof Outage [HRO] (ft)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
Roof Height [HR] (ft)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.58	519.43	522.49	525.74	529.37	532.81	536.88	538.06	535.60	529.83	523.43	517.82	
Vapor Space Expansion Factor [KE]	0.0335	0.0318	0.0338	0.0377	0.0344	0.0351	0.0373	0.0389	0.0367	0.0333	0.0354	0.0337	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9975	0.9975	0.9972	0.9970	0.9966	0.9962	0.9957	0.9955	0.9958	0.9965	0.9971	0.9976	
Working Losses [LW] (lbs)	8.45	8.59	9.40	10.28	11.47	12.65	14.27	14.80	13.86	11.81	9.77	8.26	133.61
Working Loss Turnover (Saturation) Factor [KN]	0.1752	0.1744	0.1752	0.1749	0.1752	0.1749	0.1752	0.1752	0.1749	0.1752	0.1749	0.1752	
Annual Turnovers [N]	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	3,591.19	
Maximum Liquid Height [HLX] (ft)	14	14	14	14	14	14	14	14	14	14	14	14	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	8.55	8.68	9.51	10.41	11.60	12.80	14.45	14.99	14.03	11.95	9.89	8.36	135.22

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-25002 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/Distillate T-25002	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25002	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	789.13	402.66	2,812.81	0.00	4,004.60
Benzene	00071-43-2	0.00	0.00	0.84	2.35	2.98	0.00	6.17
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Cyclohexane	00110-82-7	0.00	0.00	0.33	0.89	1.16	0.00	2.38
Ethylbenzene	00100-41-4	0.00	0.00	0.05	1.65	0.20	0.00	1.90
Hexane (n)	00110-54-3	0.00	0.00	6.93	12.08	24.70	0.00	43.72
Isooctane	00540-84-1	0.00	0.00	4.59	25.13	16.37	0.00	46.09
Methyl alcohol	00067-56-1	0.00	0.00	0.03	0.07	0.12	0.00	0.23
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	0.80	7.77	2.86	0.00	11.44
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.08	11.92	0.29	0.00	12.29
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.82	28.15	2.92	0.00	31.89

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-25002 EST

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP NM-25002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP NM-25002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

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Emissions Report

Tank RFP NM-25002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-25002 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	67.02	60.54	67.02	64.86	67.02	64.86	67.02	67.02	64.86	67.02	64.86	67.02	789.13
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	238.90	215.78	238.90	231.19	238.90	231.19	238.90	238.90	231.19	238.90	231.19	238.90	2,812.81
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	128.32	1,539.84
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	339.47	309.87	339.47	329.60	339.47	329.60	339.47	339.47	329.60	339.47	329.60	339.47	4,004.60

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	341.96
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	46.47
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-25006 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Gasoline/Distillate T-25006	Jan-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Feb-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Mar-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Apr-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	May-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Jun-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Jul-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Aug-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Sep-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Oct-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Nov-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Gasoline/Distillate T-25006	Dec-20	10,500,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	2,104.34	402.66	2,713.73	0.00	5,220.73
Benzene	00071-43-2	0.00	0.00	2.23	2.35	2.88	0.00	7.46
Cumene	00098-82-8	0.00	0.00	0.00	0.07	0.00	0.00	0.08
Cyclohexane	00110-82-7	0.00	0.00	0.87	0.89	1.12	0.00	2.88
Ethylbenzene	00100-41-4	0.00	0.00	0.15	1.65	0.19	0.00	1.98
Hexane (n)	00110-54-3	0.00	0.00	18.48	12.08	23.83	0.00	54.40
Isooctane	00540-84-1	0.00	0.00	12.25	25.13	15.79	0.00	53.17
Methyl alcohol	00067-56-1	0.00	0.00	0.09	0.07	0.12	0.00	0.28
Naphthalene	00091-20-3	0.00	0.00	0.00	0.77	0.00	0.00	0.77
Toluene	00108-88-3	0.00	0.00	2.14	7.77	2.76	0.00	12.67
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.22	11.92	0.28	0.00	12.42
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	2.19	28.15	2.82	0.00	33.15

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25006 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0076	86.18
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP NM-25006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0082	86.18
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0090	86.18
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0010	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0108	86.18
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0073	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP NM-25006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0071	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0092	86.18
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0061	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25006 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0068	86.18
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-25006 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	178.73	161.43	178.73	172.96	178.73	172.96	178.73	178.73	172.96	178.73	172.96	178.73	2,104.34
Primary Rim Seal	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	
Secondary Rim Seal	None	None	None	None	None	None	None	None	None	None	None	None	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	33.56	402.66
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	230.48	208.18	230.48	223.05	230.48	223.05	230.48	230.48	223.05	230.48	223.05	230.48	2,713.73
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	123.80	123.80	123.80	123.80	123.80	123.80	123.80	123.80	123.80	123.80	123.80	123.80	1,485.60
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	442.76	403.16	442.76	429.56	442.76	429.56	442.76	442.76	429.56	442.76	429.56	442.76	5,220.73

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	12	1.3	341.96
Unslotted Guide-Pole Well; Gasketed Sliding Cover, w. Sleeve (IFR, EFR, or DEFR)	1	8.6	188.51
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-25007 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-25007	Jan-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Feb-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Mar-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Apr-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	May-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Jun-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Jul-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Aug-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Sep-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Oct-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Nov-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-25007	Dec-20	10,500,000.00	VFR	60.00	972,931	White/White	Average	0.25	FALSE	Uninsulated
	Annual	126,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	1,621.88	210.46	0.00	0.00	0.00	0.00	1,832.34
Benzene	00071-43-2	27.43	3.55	0.00	0.00	0.00	0.00	30.99
Cumene	00098-82-8	7.16	0.93	0.00	0.00	0.00	0.00	8.09
Cyclohexane	00110-82-7	619.92	80.27	0.00	0.00	0.00	0.00	700.19
Ethylbenzene	00100-41-4	56.19	7.30	0.00	0.00	0.00	0.00	63.49
Hexane (n)	00110-54-3	15.51	2.01	0.00	0.00	0.00	0.00	17.52
Hydrogen Sulfide	07783-06-4	34.94	4.50	0.00	0.00	0.00	0.00	39.44
Isoprene	00078-79-5	83.68	10.82	0.00	0.00	0.00	0.00	94.49
Naphthalene	00091-20-3	0.30	0.04	0.00	0.00	0.00	0.00	0.34
Toluene	00108-88-3	43.41	5.63	0.00	0.00	0.00	0.00	49.04
Trimethylbenzene (1,2,4)	00095-63-6	66.24	8.62	0.00	0.00	0.00	0.00	74.85
Xylenes (mixed isomers)	01330-20-7	146.72	19.05	0.00	0.00	0.00	0.00	165.77

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25007 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.60	57.72	58.42	53.77	63.07	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.96	58.28	59.15	54.66	63.64	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.30	60.76	61.97	57.14	66.79	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.53	63.47	64.99	59.61	70.38	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.11	66.95	68.56	63.53	73.59	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.64	70.21	71.93	66.76	77.09	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.90	74.20	75.96	70.49	81.44	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.69	75.52	77.20	71.53	82.87	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.25	73.58	74.95	69.64	80.27	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.13	68.40	69.43	64.65	74.21	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.77	62.38	63.19	58.25	68.13	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.62	57.03	57.69	53.03	62.34	4.3	14.68
	Annual	64.51			1,598		65.71	66.95			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0067	0.0091	0.0024	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0069	0.0093	0.0024	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0088	0.0075	0.0103	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0097	0.0081	0.0115	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0109	0.0093	0.0128	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0121	0.0103	0.0142	0.0040	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0137	0.0116	0.0163	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0143	0.0120	0.0170	0.0050	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0133	0.0113	0.0157	0.0044	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0112	0.0096	0.0130	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0091	0.0078	0.0107	0.0030	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0076	0.0065	0.0089	0.0024	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0106					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0143 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25007 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1205	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1609	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4053	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0981	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8351	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.7708	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0256	34.08
Isoprene	Jan-20	Organic Liquids	7.1871	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0573	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3151	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0854	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1435	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Feb-20	Organic Liquids	0.0463	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1842	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4035	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1007	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8705	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.2253	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0252	34.08
Isoprene	Feb-20	Organic Liquids	7.3053	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0568	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3224	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0877	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0889	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2363	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0515	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2779	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3968	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1111	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0126	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.9136	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Mar-20	Organic Liquids	7.7768	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0551	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3518	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0968	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3427	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0576	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3853	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3896	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1232	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Emissions Report

Tank RFP NM-25007 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1749	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.6419	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0227	34.08
Isoprene	Apr-20	Organic Liquids	8.3077	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0533	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3859	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0249	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0400	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1075	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4777	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0655	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5212	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3814	84.16
Ethylbenzene	May-20	Organic Liquids	0.1390	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3797	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.7295	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0213	34.08
Isoprene	May-20	Organic Liquids	8.9673	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0513	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4296	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0268	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0286	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0409	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1213	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6153	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0739	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6594	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3738	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1554	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5872	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	274.5424	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0201	34.08
Isoprene	Jun-20	Organic Liquids	9.6252	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0495	68.12
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4747	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0266	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0325	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0418	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1358	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7940	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0852	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8387	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3649	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1773	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8554	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	290.5112	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0187	34.08
Isoprene	Jul-20	Organic Liquids	10.4609	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0474	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5339	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Emissions Report

Tank RFP NM-25007 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0378	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0428	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1551	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0916	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8519	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0889	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8966	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3623	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1845	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9418	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	295.5283	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0183	34.08
Isoprene	Aug-20	Organic Liquids	10.7269	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0468	68.12
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5533	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0396	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0431	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1615	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7479	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0822	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7924	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3671	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1716	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7862	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	286.4537	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0190	34.08
Isoprene	Sep-20	Organic Liquids	10.2469	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0479	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5186	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0364	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1501	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5123	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0676	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5560	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3794	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1431	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4319	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.9978	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0210	34.08
Isoprene	Oct-20	Organic Liquids	9.1340	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0509	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4409	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0296	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0411	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1249	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2784	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0539	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Emissions Report

Tank RFP NM-25007 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3204	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3939	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1158	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0769	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.2010	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0234	34.08
Isoprene	Nov-20	Organic Liquids	7.9879	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0544	68.12
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3653	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1010	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0979	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1380	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4071	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0957	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8003	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.3386	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0259	34.08
Isoprene	Dec-20	Organic Liquids	7.0704	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0577	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3080	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0833	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-25007 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	12.47	11.06	14.38	17.13	18.13	19.81	24.40	26.23	22.24	17.57	14.82	12.23	210.46
Vapor Space Volume [VV] (ft^3)	69,626	69,626	69,626	69,626	69,626	69,626	69,626	69,626	69,626	69,626	69,626	69,626	
Vapor Space Outage [HVO] (ft)	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	
Shell Height [HS] (ft)	48	48	48	48	48	48	48	48	48	48	48	48	
Average Liquid Height [HL] (ft)	24	24	24	24	24	24	24	24	24	24	24	24	
Roof Outage [HRO] (ft)	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	
Roof Height [HR] (ft)	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.78	519.68	522.84	526.19	529.84	533.32	537.40	538.55	536.00	530.13	523.67	518.02	
Vapor Space Expansion Factor [KE]	0.0320	0.0307	0.0331	0.0372	0.0342	0.0350	0.0371	0.0385	0.0360	0.0323	0.0339	0.0321	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9899	0.9897	0.9887	0.9875	0.9860	0.9844	0.9824	0.9817	0.9829	0.9856	0.9882	0.9901	
Working Losses [LW] (lbs)	103.19	99.55	115.14	123.90	140.69	152.63	175.23	181.69	167.02	144.58	117.39	100.87	1,621.88
Working Loss Turnover (Saturation) Factor [KN]	0.4028	0.3799	0.4028	0.3951	0.4028	0.3951	0.4028	0.4028	0.3951	0.4028	0.3951	0.4028	
Annual Turnovers [N]	129.51	129.51	129.51	129.51	129.51	129.51	129.51	129.51	129.51	129.51	129.51	129.51	
Maximum Liquid Height [HLX] (ft)	47	47	47	47	47	47	47	47	47	47	47	47	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	115.67	110.61	129.52	141.03	158.82	172.44	199.63	207.92	189.26	162.15	132.21	113.09	1,832.34

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-25008 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Wastewater T-25008	Jan-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Feb-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Mar-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Apr-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	May-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Jun-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Jul-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Aug-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Sep-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Oct-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Nov-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
Wastewater T-25008	Dec-20	8,400,000.00	IFR	60.00	1,050,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	100,800,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Wastewater, as diesel	-	0.00	0.00	0.66	408.41	2.30	0.00	411.38
Benzene	00071-43-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumene	00098-82-8	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Cyclohexane	00110-82-7	0.00	0.00	0.01	0.04	0.05	0.00	0.10
Ethylbenzene	00100-41-4	0.00	0.00	0.00	0.05	0.01	0.00	0.06
Hexane (n)	00110-54-3	0.00	0.00	0.10	0.15	0.34	0.00	0.59
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Isooctane	00540-84-1	0.00	0.00	0.07	0.32	0.23	0.00	0.61
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	00091-20-3	0.00	0.00	0.00	0.03	0.00	0.00	0.03
Toluene	00108-88-3	0.00	0.00	0.01	0.11	0.04	0.00	0.17
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.00	0.32	0.01	0.00	0.33
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.01	0.44	0.05	0.00	0.50

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Emissions Report

Tank RFP NM-25008 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.66	57.72	58.35	53.69	63.02	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.01	58.28	59.06	54.56	63.57	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.33	60.76	61.85	57.02	66.68	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.55	63.47	64.85	59.46	70.24	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.12	66.95	68.41	63.38	73.44	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.65	70.21	71.76	66.60	76.92	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.91	74.20	75.79	70.32	81.27	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.71	75.52	77.04	71.36	82.71	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.28	73.58	74.82	69.50	80.14	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.17	68.40	69.33	64.54	74.12	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.83	62.38	63.11	58.15	68.07	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.68	57.03	57.63	52.96	62.30	4.3	14.68
	Annual	64.51			1,598		65.71	66.83			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Wastewater, as diesel	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Apr-20	Petroleum Distillates	0.0076	0.0064	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jun-20	Petroleum Distillates	0.0095	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Aug-20	Petroleum Distillates	0.0112	0.0094	0.0133	0.0039	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0084	0.0023	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Wastewater, as diesel	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0112 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-25008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Wastewater, as diesel	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1184	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1588	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0236	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8319	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1589	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5488	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Jan-20	Organic Liquids	0.5684	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1033	114.23
Isoprene	Jan-20	Organic Liquids	7.1764	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4024	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3145	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1409	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1815	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0235	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1004	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8664	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1581	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.9477	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Feb-20	Organic Liquids	0.5803	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1030	114.23
Isoprene	Feb-20	Organic Liquids	7.2919	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4340	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3215	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0198	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17
Wastewater, as diesel	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2324	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2740	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0231	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1106	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0067	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1551	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.5141	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Mar-20	Organic Liquids	0.6288	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1018	114.23
Isoprene	Mar-20	Organic Liquids	7.7572	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5635	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3506	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19

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Emissions Report

Tank RFP NM-25008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0964	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3375	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Apr-20	Organic Liquids	0.0573	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3800	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0227	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1226	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1669	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1519	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.1200	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0026	34.08
Isooctane	Apr-20	Organic Liquids	0.6845	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1006	114.23
Isoprene	Apr-20	Organic Liquids	8.2817	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7137	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3842	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0196	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0037	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1069	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0219	106.17
Wastewater, as diesel	May-20							
Benzene	May-20	Organic Liquids	1.4717	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	May-20	Organic Liquids	0.0652	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	May-20	Organic Liquids	1.5152	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0223	84.16
Ethylbenzene	May-20	Organic Liquids	0.1383	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	May-20	Organic Liquids	2.3706	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1482	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.1576	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	May-20	Organic Liquids	0.7561	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0991	114.23
Isoprene	May-20	Organic Liquids	8.9383	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	May-20	Organic Liquids	1.9079	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4277	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0195	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1207	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0220	106.17
Wastewater, as diesel	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6084	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jun-20	Organic Liquids	0.0735	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6525	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0218	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1546	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5768	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1448	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.9097	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0023	34.08
Isooctane	Jun-20	Organic Liquids	0.8291	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0977	114.23
Isoprene	Jun-20	Organic Liquids	9.5924	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1081	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4724	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0193	92.14

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Emissions Report

Tank RFP NM-25008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1351	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0222	106.17
Wastewater, as diesel	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7863	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Jul-20	Organic Liquids	0.0847	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8309	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0213	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1763	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8438	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1409	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.8349	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Jul-20	Organic Liquids	0.9247	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0960	114.23
Isoprene	Jul-20	Organic Liquids	10.4251	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3723	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5314	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1543	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8443	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Aug-20	Organic Liquids	0.0884	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8890	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0212	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1835	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9305	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1397	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.8761	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0021	34.08
Isooctane	Aug-20	Organic Liquids	0.9559	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0955	114.23
Isoprene	Aug-20	Organic Liquids	10.6922	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4592	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5507	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0191	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0040	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1606	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0224	106.17
Wastewater, as diesel	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7419	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7865	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0214	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1708	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7774	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1418	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.9311	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0022	34.08
Isooctane	Sep-20	Organic Liquids	0.9008	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0964	114.23
Isoprene	Sep-20	Organic Liquids	10.2194	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0014	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3061	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17

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Emissions Report

Tank RFP NM-25008 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5166	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0192	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0039	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1494	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0223	106.17
Wastewater, as diesel	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5084	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5520	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0221	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1426	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0031	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4260	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1473	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.6270	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0024	34.08
Isooctane	Oct-20	Organic Liquids	0.7756	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.0987	114.23
Isoprene	Oct-20	Organic Liquids	9.1151	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0015	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9614	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4396	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0194	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0038	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1245	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0221	106.17
Wastewater, as diesel	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2757	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0003	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3177	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0230	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0728	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1537	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.9293	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0027	34.08
Isooctane	Nov-20	Organic Liquids	0.6517	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1013	114.23
Isoprene	Nov-20	Organic Liquids	7.9745	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0016	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6252	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3644	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0197	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0036	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0218	106.17
Wastewater, as diesel	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0959	A=6.906, B=1211, C=220.79	78.11	2.44E-07	0.0001	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	2.32E-05	0.0002	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1361	A=6.845, B=1203.5, C=222.86	84.16	8.65E-05	0.0237	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.00013	0.0030	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7974	A=6.878, B=1171.5, C=224.37	86.18	0.000368	0.1597	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.1309	A=7.40396697986706, B=958.587,	34.08	5.45E-08	0.0029	34.08
Isooctane	Dec-20	Organic Liquids	0.5566	A=6.812, B=1257.8, C=220.74	114.23	0.000771	0.1036	114.23
Isoprene	Dec-20	Organic Liquids	7.0605	A=6.091, B=706.9, C=186.1	68.12	0.000001	0.0017	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3710	A=8.079, B=1581.3, C=239.65	32.04	2.17E-06	0.0007	32.04

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Emissions Report

Tank	RFP NM-25008 EST
Facility	Paramount
Site Location	Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	6.29E-05	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3074	A=7.017, B=1377.6, C=222.64	92.14	0.000268	0.0199	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.000782	0.0035	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.001075	0.0216	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-25008 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.07	0.06	0.05	0.04	0.66
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	408.41
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	0.15	0.13	0.16	0.17	0.20	0.22	0.25	0.26	0.24	0.21	0.16	0.14	2.30
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	125.72	1,508.64
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	34.22	34.21	34.24	34.26	34.29	34.31	34.36	34.37	34.34	34.30	34.25	34.22	411.38

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0.03
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0.05
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	0.60
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1.02
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	10	1.3	0.24
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	4	0.53	0.04
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	0.20
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	0.11

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-3001 PTE
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Recovered Oil from WW T-3001	Jan-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Feb-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Mar-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Apr-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	May-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Jun-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Jul-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Aug-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Sep-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Oct-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Nov-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
Recovered Oil from WW T-3001	Dec-20	3,117,100.00	IFR	30.00	102,480	White/White	Average	0.25	FALSE	Uninsulated
	Annual	37,405,200.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 3)	-	0.00	0.00	71.93	242.99	454.70	0.00	769.62
Benzene	00071-43-2	0.00	0.00	0.03	0.18	0.21	0.00	0.43
Cumene	00098-82-8	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Cyclohexane	00110-82-7	0.00	0.00	0.04	0.21	0.25	0.00	0.50
Ethylbenzene	00100-41-4	0.00	0.00	0.01	0.32	0.03	0.00	0.36
Hexane (n)	00110-54-3	0.00	0.00	0.27	0.89	1.69	0.00	2.86
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.00	0.00	0.03	0.00	0.03
Isooctane	00540-84-1	0.00	0.00	0.18	1.87	1.13	0.00	3.18
Isoprene	00078-79-5	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Methyl alcohol	00067-56-1	0.00	0.00	0.00	0.01	0.01	0.00	0.01
Naphthalene	00091-20-3	0.00	0.00	0.00	0.15	0.00	0.00	0.15
Toluene	00108-88-3	0.00	0.00	0.04	0.65	0.22	0.00	0.91
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.01	1.90	0.04	0.00	1.95
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.04	2.61	0.25	0.00	2.90

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Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.54	57.72	58.37	53.73	63.00	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.92	58.28	59.08	54.60	63.56	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.27	60.76	61.88	57.06	66.69	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.51	63.47	64.88	59.50	70.26	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.11	66.95	68.44	63.41	73.47	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.64	70.21	71.80	66.64	76.96	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.89	74.20	75.83	70.36	81.30	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.67	75.52	77.07	71.40	82.74	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.22	73.58	74.85	69.54	80.16	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.09	68.40	69.35	64.58	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.71	62.38	63.13	58.20	68.06	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.56	57.03	57.64	53.00	62.28	4.3	14.68
	Annual	64.51			1,598		65.71	66.86			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 3)	Jan-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Feb-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
Gasoline (TVP 3)	Mar-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Apr-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	May-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Jun-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Jul-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Aug-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Sep-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP70=3, VP80=3	70	92	5.6
Gasoline (TVP 3)	Oct-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Nov-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP60=3, VP70=3	70	92	5.6
Gasoline (TVP 3)	Dec-20	Petroleum Distillates	3.0000	3.0000	3.0000	0.0000	VP50=3, VP60=3	70	92	5.6
	Annual		3.0000					70.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 3.0000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 3)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1188	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1592	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0980	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8326	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5961	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jan-20	Organic Liquids	0.5687	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Jan-20	Organic Liquids	7.1787	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jan-20	Organic Liquids	1.4031	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3146	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0853	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1414	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1821	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1005	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8673	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0030	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.0069	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Feb-20	Organic Liquids	0.5806	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0020	114.23
Isoprene	Feb-20	Organic Liquids	7.2947	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Feb-20	Organic Liquids	1.4348	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3217	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0875	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17
Gasoline (TVP 3)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2332	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Mar-20	Organic Liquids	0.0513	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2749	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1107	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0080	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0032	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.5992	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Mar-20	Organic Liquids	0.6292	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0021	114.23
Isoprene	Mar-20	Organic Liquids	7.7614	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Mar-20	Organic Liquids	1.5647	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3508	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0965	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3386	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Apr-20	Organic Liquids	0.0574	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3811	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1227	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Apr-20	Organic Liquids	2.1686	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0035	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.2312	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Apr-20	Organic Liquids	0.6851	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0023	114.23
Isoprene	Apr-20	Organic Liquids	8.2873	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Apr-20	Organic Liquids	1.7153	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3846	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0248	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1070	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	May-20							
Benzene	May-20	Organic Liquids	1.4730	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	May-20	Organic Liquids	0.0653	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5165	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	May-20	Organic Liquids	0.1384	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3725	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0038	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.2795	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	May-20	Organic Liquids	0.7568	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	May-20	Organic Liquids	8.9445	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	May-20	Organic Liquids	1.9098	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4281	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0285	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1208	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6098	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Jun-20	Organic Liquids	0.0736	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6540	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1547	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5790	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0042	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	274.0445	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jun-20	Organic Liquids	0.8299	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0028	114.23
Isoprene	Jun-20	Organic Liquids	9.5994	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jun-20	Organic Liquids	2.1103	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4729	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1352	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7880	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Jul-20	Organic Liquids	0.0848	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8326	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1765	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8463	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0046	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.9790	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Jul-20	Organic Liquids	0.9256	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0031	114.23
Isoprene	Jul-20	Organic Liquids	10.4327	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Jul-20	Organic Liquids	2.3748	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5319	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0376	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1544	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8459	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Aug-20	Organic Liquids	0.0885	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8906	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1837	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9329	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0047	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	295.0151	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Aug-20	Organic Liquids	0.9567	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0032	114.23
Isoprene	Aug-20	Organic Liquids	10.6996	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Aug-20	Organic Liquids	2.4616	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5513	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0394	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1608	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0008	106.17
Gasoline (TVP 3)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7432	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0006	78.11
Cumene	Sep-20	Organic Liquids	0.0819	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7877	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0007	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1710	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7793	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0045	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	286.0425	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Sep-20	Organic Liquids	0.9015	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0030	114.23
Isoprene	Sep-20	Organic Liquids	10.2253	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Sep-20	Organic Liquids	2.3080	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17

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Emissions Report

Tank RFP NM-3001 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Toluene	Sep-20	Organic Liquids	0.5170	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0006	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0363	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1496	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0007	106.17
Gasoline (TVP 3)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5092	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0005	78.11
Cumene	Oct-20	Organic Liquids	0.0674	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5529	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0006	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1427	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4273	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0039	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.7060	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Oct-20	Organic Liquids	0.7761	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0026	114.23
Isoprene	Oct-20	Organic Liquids	9.1191	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Oct-20	Organic Liquids	1.9626	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4399	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0005	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0295	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1246	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0006	106.17
Gasoline (TVP 3)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2763	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Nov-20	Organic Liquids	0.0538	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Nov-20	Organic Liquids	1.3183	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0005	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1156	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0737	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0033	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.9872	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Nov-20	Organic Liquids	0.6520	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0022	114.23
Isoprene	Nov-20	Organic Liquids	7.9773	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Nov-20	Organic Liquids	1.6260	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3646	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1008	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0005	106.17
Gasoline (TVP 3)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0964	A=6.906, B=1211, C=220.79	78.11	0.000752	0.0004	78.11
Cumene	Dec-20	Organic Liquids	0.0438	A=6.929, B=1455.8, C=207.2	120.19	0.000232	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1365	A=6.845, B=1203.5, C=222.86	84.16	0.000865	0.0004	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0955	A=6.95, B=1419.3, C=212.61	106.17	0.001304	0.0001	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7980	A=6.878, B=1171.5, C=224.37	86.18	0.00368	0.0029	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.1752	A=7.40396697986706, B=958.587,	34.08	5.45E-07	0.0001	34.08
Isooctane	Dec-20	Organic Liquids	0.5568	A=6.812, B=1257.8, C=220.74	114.23	0.007713	0.0019	114.23
Isoprene	Dec-20	Organic Liquids	7.0626	A=6.091, B=706.9, C=186.1	68.12	0.00001	0.0000	68.12
Methyl alcohol	Dec-20	Organic Liquids	1.3715	A=8.079, B=1581.3, C=239.65	32.04	2.17E-05	0.0000	32.04

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Emissions Report

Tank RFP NM-3001 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 5)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.000629	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3075	A=7.017, B=1377.6, C=222.64	92.14	0.00268	0.0004	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.00782	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0831	A=7.009, B=1462.3, C=215.11	106.17	0.010753	0.0004	106.17

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-3001 PTE
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	6.11	5.52	6.11	5.91	6.11	5.91	6.11	6.11	5.91	6.11	5.91	6.11	71.93
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	0.0571	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	242.99
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	38.62	34.88	38.62	37.37	38.62	37.37	38.62	38.62	37.37	38.62	37.37	38.62	454.70
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	1,365.36
Vapor Molecular Weight (lb/lbmol)	70	70	70	70	70	70	70	70	70	70	70	70	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	64.98	60.65	64.98	63.53	64.98	63.53	64.98	64.98	63.53	64.98	63.53	64.98	769.62

		Roof Fitting Loss Factors	
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	6.39
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	11.19
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	131.88
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	223.79
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	12.71
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	43.96
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	24.78

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50003 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-50003	Jan-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Feb-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Mar-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Apr-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	May-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Jun-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Jul-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Aug-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Sep-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Oct-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Nov-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50003	Dec-20	21,000,000.00	VFR	90.00	1,827,418	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	3,140.64	544.91	0.00	0.00	0.00	0.00	3,685.55
Benzene	00071-43-2	53.08	9.19	0.00	0.00	0.00	0.00	62.27
Cumene	00098-82-8	13.87	2.41	0.00	0.00	0.00	0.00	16.28
Cyclohexane	00110-82-7	1,199.45	207.58	0.00	0.00	0.00	0.00	1,407.03
Ethylbenzene	00100-41-4	108.83	18.89	0.00	0.00	0.00	0.00	127.72
Hexane (n)	00110-54-3	30.00	5.19	0.00	0.00	0.00	0.00	35.19
Hydrogen Sulfide	07783-06-4	67.49	11.62	0.00	0.00	0.00	0.00	79.11
Isoprene	00078-79-5	161.80	27.94	0.00	0.00	0.00	0.00	189.74
Naphthalene	00091-20-3	0.59	0.10	0.00	0.00	0.00	0.00	0.69
Toluene	00108-88-3	84.03	14.57	0.00	0.00	0.00	0.00	98.60
Trimethylbenzene (1,2,4)	00095-63-6	128.37	22.33	0.00	0.00	0.00	0.00	150.71
Xylenes (mixed isomers)	01330-20-7	284.18	49.34	0.00	0.00	0.00	0.00	333.52

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50003 EST

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.04	57.72	58.49	53.98	63.00	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.54	58.28	59.23	54.85	63.62	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.02	60.76	62.09	57.34	66.84	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.32	63.47	65.15	59.82	70.48	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.04	66.95	68.72	63.71	73.73	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.61	70.21	72.10	66.95	77.25	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.83	74.20	76.14	70.69	81.60	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.52	75.52	77.37	71.74	83.00	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.97	73.58	75.09	69.85	80.34	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.75	68.40	69.53	64.85	74.22	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.22	62.38	63.27	58.47	68.08	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.03	57.03	57.76	53.25	62.26	4.3	14.68
	Annual	64.51			1,598		65.71	67.08			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0067	0.0091	0.0024	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0080	0.0069	0.0093	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0088	0.0075	0.0103	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0098	0.0082	0.0116	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0109	0.0093	0.0128	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0122	0.0103	0.0143	0.0040	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0138	0.0116	0.0164	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0144	0.0120	0.0171	0.0050	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0134	0.0113	0.0157	0.0044	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0112	0.0097	0.0130	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0092	0.0078	0.0107	0.0029	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0076	0.0066	0.0089	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0106					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0144 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

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Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1227	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0452	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1631	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4051	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0984	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8385	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	226.0089	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0255	34.08
Isoprene	Jan-20	Organic Liquids	7.1985	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0572	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3158	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0857	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1463	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Feb-20	Organic Liquids	0.0465	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1870	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4033	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1010	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8748	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	228.5231	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0252	34.08
Isoprene	Feb-20	Organic Liquids	7.3197	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0568	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3233	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0384	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0879	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0890	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2405	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0517	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2822	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3965	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1115	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0190	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	238.3422	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Mar-20	Organic Liquids	7.7978	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0551	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3532	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0222	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0972	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3484	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0172	78.11
Cumene	Apr-20	Organic Liquids	0.0579	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3910	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3893	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1239	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Facility Paramount
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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1835	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	249.2021	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0226	34.08
Isoprene	Apr-20	Organic Liquids	8.3357	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0533	68.12
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3877	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0251	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0400	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1080	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0900	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4842	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0659	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5277	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3810	84.16
Ethylbenzene	May-20	Organic Liquids	0.1397	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3895	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	May-20	Organic Liquids	262.3433	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0212	34.08
Isoprene	May-20	Organic Liquids	8.9986	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0512	68.12
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4317	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0288	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0410	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1220	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6227	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0744	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6669	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3734	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1563	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5984	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	275.2215	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0200	34.08
Isoprene	Jun-20	Organic Liquids	9.6604	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0494	68.12
Naphthalene	Jun-20	Organic Liquids	0.0041	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4771	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0266	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0327	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0418	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1366	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0911	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8024	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Jul-20	Organic Liquids	0.0857	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8470	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3645	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1783	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8678	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	291.2373	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0186	34.08
Isoprene	Jul-20	Organic Liquids	10.4993	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0473	68.12
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5367	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0381	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0429	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1560	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8600	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Aug-20	Organic Liquids	0.0894	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9047	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3619	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1855	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9539	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	296.2285	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Aug-20	Organic Liquids	10.7641	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0467	68.12
Naphthalene	Aug-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5560	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0398	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1623	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0918	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7542	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0826	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7988	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3668	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1723	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7958	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	287.0145	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0190	34.08
Isoprene	Sep-20	Organic Liquids	10.2764	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0478	68.12
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5207	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0366	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1508	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5165	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0679	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5602	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3792	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1436	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4383	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	265.3955	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0209	34.08
Isoprene	Oct-20	Organic Liquids	9.1544	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0508	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4423	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0297	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0412	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1254	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2812	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0541	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3233	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3937	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1162	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0813	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	242.4924	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0234	34.08
Isoprene	Nov-20	Organic Liquids	8.0023	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0544	68.12
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3662	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0233	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0395	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1013	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0897	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0999	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0440	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1401	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4069	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0959	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8035	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.5613	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0259	34.08
Isoprene	Dec-20	Organic Liquids	7.0811	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0577	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3087	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0187	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0835	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17

Emissions Report

Tank RFP NM-50003 EST
Facility Paramount
Site Location Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	31.65	28.28	37.20	44.59	47.49	52.02	63.92	68.38	57.57	45.13	37.71	30.97	544.91
Vapor Space Volume [VV] (ft^3)	182,820	182,820	182,820	182,820	182,820	182,820	182,820	182,820	182,820	182,820	182,820	182,820	
Vapor Space Outage [HVO] (ft)	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	
Shell Height [HS] (ft)	48	48	48	48	48	48	48	48	48	48	48	48	
Average Liquid Height [HL] (ft)	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	
Roof Outage [HRO] (ft)	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Roof Height [HR] (ft)	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.93	519.86	523.09	526.50	530.17	533.67	537.76	538.89	536.28	530.34	523.83	518.15	
Vapor Space Expansion Factor [KE]	0.0309	0.0299	0.0325	0.0368	0.0341	0.0349	0.0370	0.0382	0.0354	0.0316	0.0329	0.0309	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9882	0.9879	0.9867	0.9854	0.9836	0.9818	0.9794	0.9786	0.9800	0.9832	0.9862	0.9885	
Working Losses [LW] (lbs)	199.44	192.80	222.86	240.14	272.60	295.95	339.63	352.06	323.53	279.66	227.05	194.92	3,140.64
Working Loss Turnover (Saturation) Factor [KN]	0.3884	0.3669	0.3884	0.3812	0.3884	0.3812	0.3884	0.3884	0.3812	0.3884	0.3812	0.3884	
Annual Turnovers [N]	137.90	137.90	137.90	137.90	137.90	137.90	137.90	137.90	137.90	137.90	137.90	137.90	
Maximum Liquid Height [HLX] (ft)	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	231.09	221.08	260.06	284.74	320.09	347.96	403.54	420.45	381.10	324.79	264.76	225.89	3,685.55

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50004 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate/ Ethanol T-50004	Jan-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Feb-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Mar-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Apr-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	May-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Jun-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Jul-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Aug-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Sep-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Oct-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Nov-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate/ Ethanol T-50004	Dec-20	21,000,000.00	EFR	90.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	54.65	660.10	17.80	0.00	732.55
Benzene	00071-43-2	0.00	0.00	0.10	0.07	0.03	0.00	0.20
Cumene	00098-82-8	0.00	0.00	0.03	0.39	0.01	0.00	0.43
Cyclohexane	00110-82-7	0.00	0.00	2.33	1.45	0.75	0.00	4.53
Ethylbenzene	00100-41-4	0.00	0.00	0.21	1.44	0.07	0.00	1.72
Hexane (n)	00110-54-3	0.00	0.00	0.06	0.02	0.02	0.00	0.10
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.13	0.00	0.04	0.00	0.17
Isoprene	00078-79-5	0.00	0.00	0.31	0.03	0.10	0.00	0.44
Naphthalene	00091-20-3	0.00	0.00	0.00	0.31	0.00	0.00	0.31
Toluene	00108-88-3	0.00	0.00	0.16	0.36	0.05	0.00	0.58
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.26	8.25	0.08	0.00	8.59
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.56	4.30	0.18	0.00	5.05

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50004 EST
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.05	58.52	59.28	54.77	63.79	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.54	59.27	60.21	55.83	64.60	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.02	62.14	63.46	58.70	68.21	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.33	65.21	66.88	61.55	72.21	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.04	68.79	70.55	65.54	75.56	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.61	72.17	74.05	68.90	79.20	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.83	76.21	78.14	72.68	83.60	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.52	77.43	79.27	73.64	84.90	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.98	75.15	76.65	71.41	81.90	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.75	69.57	70.71	66.02	75.40	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.22	63.30	64.19	59.38	68.99	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.04	57.78	58.50	53.99	63.01	4.3	14.68
	Annual	64.51			1,598		67.13	68.49			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50004 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1477	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0466	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1884	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0324	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1011	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8769	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	228.6703	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.3268	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Jan-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3237	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0881	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0072	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1779	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Feb-20	Organic Liquids	0.0482	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2189	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0333	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1045	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0028	106.17
Hexane (n)	Feb-20	Organic Liquids	1.9232	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	231.8551	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Feb-20	Organic Liquids	7.4810	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0047	68.12
Naphthalene	Feb-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3333	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0023	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0206	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0032	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0910	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0074	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2878	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Mar-20	Organic Liquids	0.0544	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.3299	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0363	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1169	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0032	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0912	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	243.1497	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Mar-20	Organic Liquids	8.0348	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Mar-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3683	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0234	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0037	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1019	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0083	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.4127	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	Apr-20	Organic Liquids	0.0617	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Apr-20	Organic Liquids	1.4558	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0397	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1313	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0036	106.17

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Emissions Report

Tank RFP NM-50004 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.2813	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	255.4973	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Apr-20	Organic Liquids	8.6517	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0054	68.12
Naphthalene	Apr-20	Organic Liquids	0.0032	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.4085	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0028	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0268	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0042	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1146	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0093	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.5578	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	May-20	Organic Liquids	0.0704	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.6017	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0437	84.16
Ethylbenzene	May-20	Organic Liquids	0.1485	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0040	106.17
Hexane (n)	May-20	Organic Liquids	2.5005	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	May-20	Organic Liquids	269.2441	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	May-20	Organic Liquids	9.3517	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	May-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4558	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0308	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1297	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0105	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.7074	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0021	78.11
Cumene	Jun-20	Organic Liquids	0.0797	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jun-20	Organic Liquids	1.7518	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0478	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1666	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0045	106.17
Hexane (n)	Jun-20	Organic Liquids	2.7256	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	282.8608	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Jun-20	Organic Liquids	10.0584	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0063	68.12
Naphthalene	Jun-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.5051	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0034	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0352	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0055	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1457	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0118	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.8971	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Jul-20	Organic Liquids	0.0918	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Jul-20	Organic Liquids	1.9418	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0530	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1901	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0052	106.17
Hexane (n)	Jul-20	Organic Liquids	3.0093	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	299.4058	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Jul-20	Organic Liquids	10.9336	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0068	68.12
Naphthalene	Jul-20	Organic Liquids	0.0052	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5684	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0039	92.14

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50004 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0410	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0064	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1665	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0135	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.9525	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Aug-20	Organic Liquids	0.0954	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	1.9972	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0545	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1971	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0054	106.17
Hexane (n)	Aug-20	Organic Liquids	3.0918	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	304.1002	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Aug-20	Organic Liquids	11.1851	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0070	68.12
Naphthalene	Aug-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5871	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0040	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0427	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0067	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1726	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0140	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.8262	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Sep-20	Organic Liquids	0.0872	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8709	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0511	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1813	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0049	106.17
Hexane (n)	Sep-20	Organic Liquids	2.9034	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	293.3083	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Sep-20	Organic Liquids	10.6090	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0066	68.12
Naphthalene	Sep-20	Organic Liquids	0.0049	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5447	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0388	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0060	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1586	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0129	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5643	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	Oct-20	Organic Liquids	0.0708	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6082	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0439	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1493	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0041	106.17
Hexane (n)	Oct-20	Organic Liquids	2.5104	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	269.8504	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Oct-20	Organic Liquids	9.3829	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0058	68.12
Naphthalene	Oct-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4579	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0310	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1304	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3137	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0559	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50004 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3560	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0370	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1199	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17
Hexane (n)	Nov-20	Organic Liquids	2.1307	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	245.7525	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Nov-20	Organic Liquids	8.1639	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0051	68.12
Naphthalene	Nov-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3766	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0026	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0241	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0038	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1045	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0085	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1231	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0452	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1635	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0318	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0984	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8391	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	226.0502	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.2005	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3159	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0857	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0070	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-50004 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	4.08	4.05	4.82	5.13	5.09	4.93	5.09	4.96	4.54	4.21	3.81	3.94	54.65
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Tank Construction	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Wind Speed Dependent Rim Seal Loss Factor (lbmol/mph^n ft yr)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Seal-Related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	55.01	55.01	55.01	55.01	55.01	55.01	55.01	55.01	55.01	55.01	55.01	55.01	660.10
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	1.41	1.34	1.54	1.58	1.59	1.54	1.59	1.57	1.47	1.44	1.34	1.39	17.80
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	74.78	78.67	81.87	86.30	84.41	84.41	84.41	83.14	80.59	76.08	73.47	73.47	961.60
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Fitting Wind Speed Correction Factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Wind Speed (mph)	4.5	5.1	5.6	6.3	6	6	6	5.8	5.4	4.7	4.3	4.3	
Total Losses (lbs)	60.49	60.40	61.38	61.71	61.70	61.48	61.70	61.54	61.02	60.65	60.16	60.33	732.55

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	KFb (lbmol/(yr mph^n)	m	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0	0	0.36
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	0	0	0.62
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.02	0.97	0.12
Rim Vent; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.71	0.1	1	0.24
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Gasketed (IFR, EFR, or DEFR)	10	1.3	0.08	0.65	3.31
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	9	0.53	0.11	0.13	1.32
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	9.9	0.89	9.54
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.2	0.94	2.30

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50005 PTE

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-50005	Jan-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Feb-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Mar-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Apr-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	May-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Jun-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Jul-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Aug-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Sep-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Oct-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Nov-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50005	Dec-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
	Annual	151,200,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	2,831.78	901.33	0.00	0.00	0.00	0.00	3,733.11
Benzene	00071-43-2	46.75	14.80	0.00	0.00	0.00	0.00	61.55
Cumene	00098-82-8	12.71	4.06	0.00	0.00	0.00	0.00	16.78
Cyclohexane	00110-82-7	1,053.63	333.29	0.00	0.00	0.00	0.00	1,386.92
Ethylbenzene	00100-41-4	98.70	31.46	0.00	0.00	0.00	0.00	130.16
Hexane (n)	00110-54-3	26.24	8.29	0.00	0.00	0.00	0.00	34.53
Hydrogen Sulfide	07783-06-4	56.45	17.64	0.00	0.00	0.00	0.00	74.09
Isoprene	00078-79-5	139.23	43.82	0.00	0.00	0.00	0.00	183.05
Naphthalene	00091-20-3	0.56	0.18	0.00	0.00	0.00	0.00	0.74
Toluene	00108-88-3	75.04	23.83	0.00	0.00	0.00	0.00	98.87
Trimethylbenzene (1,2,4)	00095-63-6	118.98	38.11	0.00	0.00	0.00	0.00	157.09
Xylenes (mixed isomers)	01330-20-7	258.06	82.28	0.00	0.00	0.00	0.00	340.34

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50005 PTE

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	24.40	58.77	60.71	54.61	66.81	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	25.40	59.58	61.99	55.64	68.34	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	29.96	62.57	65.94	58.45	73.43	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	35.14	65.76	70.02	61.23	78.81	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	34.61	69.37	73.86	65.21	82.51	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	36.16	72.79	77.59	68.55	86.63	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	37.79	76.85	81.77	72.33	91.22	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	37.73	78.04	82.73	73.30	92.16	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	33.46	75.64	79.49	71.12	87.85	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	28.14	69.95	72.84	65.80	79.87	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	26.60	63.59	65.86	59.21	72.51	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	24.04	58.02	59.85	53.84	65.86	4.3	14.68
	Annual	64.51			1,598		67.58	71.05			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0084	0.0069	0.0103	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0088	0.0071	0.0108	0.0037	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0100	0.0078	0.0127	0.0049	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0114	0.0086	0.0150	0.0064	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0129	0.0098	0.0168	0.0070	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0145	0.0109	0.0190	0.0082	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0164	0.0123	0.0218	0.0096	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0169	0.0127	0.0224	0.0098	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0153	0.0118	0.0198	0.0079	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0125	0.0100	0.0155	0.0056	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0100	0.0080	0.0123	0.0043	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0082	0.0067	0.0100	0.0033	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0121					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0169 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

Tank RFP NM-50005 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1942	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0176	78.11
Cumene	Jan-20	Organic Liquids	0.0492	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Jan-20	Organic Liquids	1.2355	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3998	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1063	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Jan-20	Organic Liquids	1.9483	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0101	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	233.5659	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0245	34.08
Isoprene	Jan-20	Organic Liquids	7.5643	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0559	68.12
Naphthalene	Jan-20	Organic Liquids	0.0025	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3384	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0272	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0210	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0388	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0926	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0892	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.2371	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Feb-20	Organic Liquids	0.0516	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2788	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3967	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1112	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Feb-20	Organic Liquids	2.0139	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	238.0017	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Feb-20	Organic Liquids	7.7811	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0551	68.12
Naphthalene	Feb-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3521	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0969	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.3775	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0171	78.11
Cumene	Mar-20	Organic Liquids	0.0596	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Mar-20	Organic Liquids	1.4204	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3874	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1272	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17
Hexane (n)	Mar-20	Organic Liquids	2.2278	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0097	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	252.0683	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0223	34.08
Isoprene	Mar-20	Organic Liquids	8.4792	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0528	68.12
Naphthalene	Mar-20	Organic Liquids	0.0031	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3971	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0269	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0258	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0402	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1110	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0901	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.5362	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Apr-20	Organic Liquids	0.0691	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.5800	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3781	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1459	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17

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Emissions Report

Tank RFP NM-50005 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.4680	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0094	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	267.2354	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0207	34.08
Isoprene	Apr-20	Organic Liquids	9.2486	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0505	68.12
Naphthalene	Apr-20	Organic Liquids	0.0037	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.4487	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0302	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0413	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1274	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0908	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.6991	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0164	78.11
Cumene	May-20	Organic Liquids	0.0791	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	May-20	Organic Liquids	1.7436	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3695	84.16
Ethylbenzene	May-20	Organic Liquids	0.1656	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	May-20	Organic Liquids	2.7132	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0092	86.18
Hydrogen Sulfide	May-20	Organic Liquids	282.1236	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0194	34.08
Isoprene	May-20	Organic Liquids	10.0198	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0485	68.12
Naphthalene	May-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.5024	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0350	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0423	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1448	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0914	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.8706	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Jun-20	Organic Liquids	0.0901	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Jun-20	Organic Liquids	1.9153	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3614	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1868	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Jun-20	Organic Liquids	2.9697	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	297.1386	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Jun-20	Organic Liquids	10.8126	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0466	68.12
Naphthalene	Jun-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.5595	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0401	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1635	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0919	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	2.0798	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0157	78.11
Cumene	Jul-20	Organic Liquids	0.1039	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Jul-20	Organic Liquids	2.1244	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3525	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.2133	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0352	106.17
Hexane (n)	Jul-20	Organic Liquids	3.2808	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0087	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	314.6755	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0169	34.08
Isoprene	Jul-20	Organic Liquids	11.7567	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0445	68.12
Naphthalene	Jul-20	Organic Liquids	0.0061	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.6301	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0260	92.14

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Emissions Report

Tank RFP NM-50005 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0468	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0443	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1870	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0924	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	2.1302	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0156	78.11
Cumene	Aug-20	Organic Liquids	0.1073	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0047	120.19
Cyclohexane	Aug-20	Organic Liquids	2.1747	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3505	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.2199	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0353	106.17
Hexane (n)	Aug-20	Organic Liquids	3.3556	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0086	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	318.7934	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0167	34.08
Isoprene	Aug-20	Organic Liquids	11.9811	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0441	68.12
Naphthalene	Aug-20	Organic Liquids	0.0063	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.6473	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0259	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0484	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0445	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1927	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0925	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.9632	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0159	78.11
Cumene	Sep-20	Organic Liquids	0.0961	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Sep-20	Organic Liquids	2.0079	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3574	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1985	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0352	106.17
Hexane (n)	Sep-20	Organic Liquids	3.1077	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0088	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	305.0026	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0176	34.08
Isoprene	Sep-20	Organic Liquids	11.2336	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0456	68.12
Naphthalene	Sep-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5907	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0261	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0430	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0437	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1738	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0921	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.6542	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0165	78.11
Cumene	Oct-20	Organic Liquids	0.0763	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6985	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3718	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1601	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Oct-20	Organic Liquids	2.6458	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	278.0858	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0197	34.08
Isoprene	Oct-20	Organic Liquids	9.8091	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0490	68.12
Naphthalene	Oct-20	Organic Liquids	0.0042	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4875	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0265	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0336	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0420	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1400	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0912	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3744	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0171	78.11
Cumene	Nov-20	Organic Liquids	0.0594	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50005 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.4172	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3876	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1269	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17
Hexane (n)	Nov-20	Organic Liquids	2.2230	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0097	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	251.7592	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0223	34.08
Isoprene	Nov-20	Organic Liquids	8.4637	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0529	68.12
Naphthalene	Nov-20	Organic Liquids	0.0031	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3961	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0269	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0258	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0402	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1107	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0901	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1662	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Dec-20	Organic Liquids	0.0476	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Dec-20	Organic Liquids	1.2071	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4018	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.1032	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Dec-20	Organic Liquids	1.9053	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0101	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	230.6254	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0249	34.08
Isoprene	Dec-20	Organic Liquids	7.4214	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0564	68.12
Naphthalene	Dec-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3295	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0203	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0386	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0899	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0891	106.17

Emissions Report

Tank RFP NM-50005 PTE
Facility Paramount
Site Location Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	41.77	40.85	60.38	77.55	87.54	98.11	118.65	121.51	95.13	68.38	51.37	40.09	901.33
Vapor Space Volume [VV] (ft^3)	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	
Vapor Space Outage [HVO] (ft)	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	
Shell Height [HS] (ft)	48	48	48	48	48	48	48	48	48	48	48	48	
Average Liquid Height [HL] (ft)	21	21	21	21	21	21	21	21	21	21	21	21	
Roof Outage [HRO] (ft)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Roof Height [HR] (ft)	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
Paint Solar Absorptance Factor [α], Roof	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
Roof Color/Shade	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	522.33	524.08	528.98	533.95	538.03	542.06	546.37	547.09	543.00	535.39	527.79	521.36	
Vapor Space Expansion Factor [KE]	0.0430	0.0449	0.0532	0.0627	0.0613	0.0638	0.0664	0.0661	0.0585	0.0491	0.0468	0.0424	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9877	0.9872	0.9854	0.9834	0.9813	0.9791	0.9763	0.9756	0.9778	0.9819	0.9855	0.9880	
Working Losses [LW] (lbs)	170.73	165.83	199.97	220.87	253.04	275.92	318.23	327.20	292.04	246.20	195.50	166.26	2,831.78
Working Loss Turnover (Saturation) Factor [KN]	0.5181	0.4841	0.5181	0.5068	0.5181	0.5068	0.5181	0.5181	0.5068	0.5181	0.5068	0.5181	
Annual Turnovers [N]	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	
Maximum Liquid Height [HLX] (ft)	41	41	41	41	41	41	41	41	41	41	41	41	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	212.50	206.68	260.35	298.42	340.58	374.02	436.88	448.72	387.17	314.58	246.87	206.35	3,733.11

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50006 PTE

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-50006	Jan-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Feb-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Mar-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Apr-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	May-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Jun-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Jul-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Aug-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Sep-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Oct-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Nov-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
Distillate T-50006	Dec-20	12,600,000.00	VFR	86.00	1,738,115	Aluminum/Diffuse	Average	0.64	FALSE	Uninsulated
	Annual	151,200,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	2,831.78	901.33	0.00	0.00	0.00	0.00	3,733.11
Benzene	00071-43-2	46.75	14.80	0.00	0.00	0.00	0.00	61.55
Cumene	00098-82-8	12.71	4.06	0.00	0.00	0.00	0.00	16.78
Cyclohexane	00110-82-7	1,053.63	333.29	0.00	0.00	0.00	0.00	1,386.92
Ethylbenzene	00100-41-4	98.70	31.46	0.00	0.00	0.00	0.00	130.16
Hexane (n)	00110-54-3	26.24	8.29	0.00	0.00	0.00	0.00	34.53
Hydrogen Sulfide	07783-06-4	56.45	17.64	0.00	0.00	0.00	0.00	74.09
Isoprene	00078-79-5	139.23	43.82	0.00	0.00	0.00	0.00	183.05
Naphthalene	00091-20-3	0.56	0.18	0.00	0.00	0.00	0.00	0.74
Toluene	00108-88-3	75.04	23.83	0.00	0.00	0.00	0.00	98.87
Trimethylbenzene (1,2,4)	00095-63-6	118.98	38.11	0.00	0.00	0.00	0.00	157.09
Xylenes (mixed isomers)	01330-20-7	258.06	82.28	0.00	0.00	0.00	0.00	340.34

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-50006 PTE
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	24.40	58.77	60.71	54.61	66.81	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	25.40	59.58	61.99	55.64	68.34	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	29.96	62.57	65.94	58.45	73.43	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	35.14	65.76	70.02	61.23	78.81	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	34.61	69.37	73.86	65.21	82.51	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	36.16	72.79	77.59	68.55	86.63	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	37.79	76.85	81.77	72.33	91.22	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	37.73	78.04	82.73	73.30	92.16	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	33.46	75.64	79.49	71.12	87.85	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	28.14	69.95	72.84	65.80	79.87	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	26.60	63.59	65.86	59.21	72.51	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	24.04	58.02	59.85	53.84	65.86	4.3	14.68
	Annual	64.51			1,598		67.58	71.05			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0084	0.0069	0.0103	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0088	0.0071	0.0108	0.0037	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0100	0.0078	0.0127	0.0049	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0114	0.0086	0.0150	0.0064	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0129	0.0098	0.0168	0.0070	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0145	0.0109	0.0190	0.0082	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0164	0.0123	0.0218	0.0096	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0169	0.0127	0.0224	0.0098	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0153	0.0118	0.0198	0.0079	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0125	0.0100	0.0155	0.0056	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0100	0.0080	0.0123	0.0043	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0082	0.0067	0.0100	0.0033	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0121					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0169 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50006 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1942	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0176	78.11
Cumene	Jan-20	Organic Liquids	0.0492	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Jan-20	Organic Liquids	1.2355	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3998	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1063	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Jan-20	Organic Liquids	1.9483	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0101	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	233.5659	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0245	34.08
Isoprene	Jan-20	Organic Liquids	7.5643	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0559	68.12
Naphthalene	Jan-20	Organic Liquids	0.0025	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3384	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0272	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0210	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0388	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0926	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0892	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.2371	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Feb-20	Organic Liquids	0.0516	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2788	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3967	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1112	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Feb-20	Organic Liquids	2.0139	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	238.0017	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0239	34.08
Isoprene	Feb-20	Organic Liquids	7.7811	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0551	68.12
Naphthalene	Feb-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3521	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0392	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0969	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0895	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.3775	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0171	78.11
Cumene	Mar-20	Organic Liquids	0.0596	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Mar-20	Organic Liquids	1.4204	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3874	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1272	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17
Hexane (n)	Mar-20	Organic Liquids	2.2278	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0097	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	252.0683	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0223	34.08
Isoprene	Mar-20	Organic Liquids	8.4792	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0528	68.12
Naphthalene	Mar-20	Organic Liquids	0.0031	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3971	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0269	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0258	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0402	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1110	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0901	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.5362	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Apr-20	Organic Liquids	0.0691	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Apr-20	Organic Liquids	1.5800	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3781	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1459	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17

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Emissions Report

Tank RFP NM-50006 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.4680	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0094	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	267.2354	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0207	34.08
Isoprene	Apr-20	Organic Liquids	9.2486	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0505	68.12
Naphthalene	Apr-20	Organic Liquids	0.0037	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.4487	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0302	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0413	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1274	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0908	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.6991	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0164	78.11
Cumene	May-20	Organic Liquids	0.0791	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	May-20	Organic Liquids	1.7436	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3695	84.16
Ethylbenzene	May-20	Organic Liquids	0.1656	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	May-20	Organic Liquids	2.7132	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0092	86.18
Hydrogen Sulfide	May-20	Organic Liquids	282.1236	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0194	34.08
Isoprene	May-20	Organic Liquids	10.0198	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0485	68.12
Naphthalene	May-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.5024	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0350	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0423	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1448	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0914	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.8706	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0161	78.11
Cumene	Jun-20	Organic Liquids	0.0901	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Jun-20	Organic Liquids	1.9153	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3614	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1868	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Jun-20	Organic Liquids	2.9697	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	297.1386	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0182	34.08
Isoprene	Jun-20	Organic Liquids	10.8126	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0466	68.12
Naphthalene	Jun-20	Organic Liquids	0.0051	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.5595	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0262	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0401	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0432	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1635	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0919	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	2.0798	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0157	78.11
Cumene	Jul-20	Organic Liquids	0.1039	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Jul-20	Organic Liquids	2.1244	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3525	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.2133	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0352	106.17
Hexane (n)	Jul-20	Organic Liquids	3.2808	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0087	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	314.6755	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0169	34.08
Isoprene	Jul-20	Organic Liquids	11.7567	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0445	68.12
Naphthalene	Jul-20	Organic Liquids	0.0061	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.6301	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0260	92.14

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Emissions Report

Tank RFP NM-50006 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0468	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0443	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1870	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0924	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	2.1302	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0156	78.11
Cumene	Aug-20	Organic Liquids	0.1073	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0047	120.19
Cyclohexane	Aug-20	Organic Liquids	2.1747	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3505	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.2199	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0353	106.17
Hexane (n)	Aug-20	Organic Liquids	3.3556	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0086	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	318.7934	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0167	34.08
Isoprene	Aug-20	Organic Liquids	11.9811	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0441	68.12
Naphthalene	Aug-20	Organic Liquids	0.0063	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.6473	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0259	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0484	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0445	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1927	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0925	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.9632	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0159	78.11
Cumene	Sep-20	Organic Liquids	0.0961	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Sep-20	Organic Liquids	2.0079	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3574	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1985	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0352	106.17
Hexane (n)	Sep-20	Organic Liquids	3.1077	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0088	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	305.0026	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0176	34.08
Isoprene	Sep-20	Organic Liquids	11.2336	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0456	68.12
Naphthalene	Sep-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5907	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0261	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0430	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0437	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1738	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0921	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.6542	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0165	78.11
Cumene	Oct-20	Organic Liquids	0.0763	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6985	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3718	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1601	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0349	106.17
Hexane (n)	Oct-20	Organic Liquids	2.6458	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	278.0858	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0197	34.08
Isoprene	Oct-20	Organic Liquids	9.8091	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0490	68.12
Naphthalene	Oct-20	Organic Liquids	0.0042	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4875	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0265	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0336	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0420	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1400	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0912	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3744	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0171	78.11
Cumene	Nov-20	Organic Liquids	0.0594	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19

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Emissions Report

Tank RFP NM-50006 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.4172	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3876	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1269	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17
Hexane (n)	Nov-20	Organic Liquids	2.2230	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0097	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	251.7592	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0223	34.08
Isoprene	Nov-20	Organic Liquids	8.4637	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0529	68.12
Naphthalene	Nov-20	Organic Liquids	0.0031	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3961	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0269	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0258	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0402	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1107	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0901	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1662	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0177	78.11
Cumene	Dec-20	Organic Liquids	0.0476	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Dec-20	Organic Liquids	1.2071	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4018	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.1032	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0342	106.17
Hexane (n)	Dec-20	Organic Liquids	1.9053	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0101	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	230.6254	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0249	34.08
Isoprene	Dec-20	Organic Liquids	7.4214	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0564	68.12
Naphthalene	Dec-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3295	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0203	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0386	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0899	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0891	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-50006 PTE
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	41.77	40.85	60.38	77.55	87.54	98.11	118.65	121.51	95.13	68.38	51.37	40.09	901.33
Vapor Space Volume [VV] (ft^3)	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	162,041	
Vapor Space Outage [HVO] (ft)	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90	
Shell Height [HS] (ft)	48	48	48	48	48	48	48	48	48	48	48	48	
Average Liquid Height [HL] (ft)	21	21	21	21	21	21	21	21	21	21	21	21	
Roof Outage [HRO] (ft)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Roof Height [HR] (ft)	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
Paint Solar Absorptance Factor [α], Roof	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
Roof Color/Shade	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	Aluminum/Diffuse	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	522.33	524.08	528.98	533.95	538.03	542.06	546.37	547.09	543.00	535.39	527.79	521.36	
Vapor Space Expansion Factor [KE]	0.0430	0.0449	0.0532	0.0627	0.0613	0.0638	0.0664	0.0661	0.0585	0.0491	0.0468	0.0424	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9877	0.9872	0.9854	0.9834	0.9813	0.9791	0.9763	0.9756	0.9778	0.9819	0.9855	0.9880	
Working Losses [LW] (lbs)	170.73	165.83	199.97	220.87	253.04	275.92	318.23	327.20	292.04	246.20	195.50	166.26	2,831.78
Working Loss Turnover (Saturation) Factor [KN]	0.5181	0.4841	0.5181	0.5068	0.5181	0.5068	0.5181	0.5181	0.5068	0.5181	0.5068	0.5181	
Annual Turnovers [N]	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	86.99	
Maximum Liquid Height [HLX] (ft)	41	41	41	41	41	41	41	41	41	41	41	41	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	212.50	206.68	260.35	298.42	340.58	374.02	436.88	448.72	387.17	314.58	246.87	206.35	3,733.11

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-50008 PTE

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-50008	Jan-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Feb-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Mar-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Apr-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	May-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Jun-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Jul-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Aug-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Sep-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Oct-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Nov-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-50008	Dec-20	11,750,000.00	DEFR	86.00	2,100,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	141,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	0.00	0.00	1.18	386.52	2.32	0.00	390.02
Benzene	00071-43-2	0.00	0.00	0.02	0.04	0.04	0.00	0.10
Cumene	00098-82-8	0.00	0.00	0.01	0.23	0.01	0.00	0.24
Cyclohexane	00110-82-7	0.00	0.00	0.45	0.85	0.89	0.00	2.19
Ethylbenzene	00100-41-4	0.00	0.00	0.04	0.84	0.08	0.00	0.96
Hexane (n)	00110-54-3	0.00	0.00	0.01	0.01	0.02	0.00	0.05
Hydrogen Sulfide	07783-06-4	0.00	0.00	0.03	0.00	0.05	0.00	0.08
Isoprene	00078-79-5	0.00	0.00	0.06	0.02	0.12	0.00	0.20
Naphthalene	00091-20-3	0.00	0.00	0.00	0.18	0.00	0.00	0.18
Toluene	00108-88-3	0.00	0.00	0.03	0.21	0.06	0.00	0.30
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.05	4.83	0.09	0.00	4.97
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.11	2.52	0.21	0.00	2.84

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Emissions Report

Tank RFP NM-50008 PTE
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	16.54	57.72	58.06	53.92	62.20	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	15.65	58.28	58.70	54.79	62.62	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	16.35	60.76	61.35	57.26	65.44	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	17.93	63.47	64.21	59.73	68.70	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	16.44	66.95	67.74	63.63	71.85	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	16.76	70.21	71.05	66.86	75.23	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	17.88	74.20	75.06	70.59	79.53	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	18.78	75.52	76.34	71.64	81.03	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	17.92	73.58	74.25	69.77	78.73	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	16.48	68.40	68.90	64.78	73.02	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	17.47	62.38	62.77	58.41	67.14	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	16.63	57.03	57.35	53.20	61.51	4.3	14.68
	Annual	64.51			1,598		65.71	66.32			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0077	0.0067	0.0089	0.0021	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0079	0.0069	0.0090	0.0021	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0086	0.0075	0.0098	0.0023	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0095	0.0082	0.0109	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0106	0.0093	0.0121	0.0028	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0118	0.0103	0.0134	0.0031	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0134	0.0116	0.0154	0.0037	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0139	0.0120	0.0161	0.0041	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0130	0.0113	0.0150	0.0037	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0110	0.0096	0.0125	0.0029	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0090	0.0078	0.0104	0.0026	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0075	0.0066	0.0087	0.0021	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0103					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0139 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50008 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1094	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Jan-20	Organic Liquids	0.0445	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1496	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4062	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0969	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8180	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	224.5774	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0257	34.08
Isoprene	Jan-20	Organic Liquids	7.1298	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0575	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3116	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0189	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0381	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0844	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0887	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1295	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Feb-20	Organic Liquids	0.0456	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1700	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4046	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.0991	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8489	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	226.7338	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0254	34.08
Isoprene	Feb-20	Organic Liquids	7.2334	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0571	68.12
Naphthalene	Feb-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3180	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0194	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0383	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0863	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0889	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2155	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0503	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2569	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3982	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1087	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	1.9808	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	235.7686	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0242	34.08
Isoprene	Mar-20	Organic Liquids	7.6718	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0555	68.12
Naphthalene	Mar-20	Organic Liquids	0.0025	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3452	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0272	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0216	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0390	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0947	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0893	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3146	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0173	78.11
Cumene	Apr-20	Organic Liquids	0.0560	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3569	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3915	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1200	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50008 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1321	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	245.8415	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0230	34.08
Isoprene	Apr-20	Organic Liquids	8.1683	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0538	68.12
Naphthalene	Apr-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3769	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0241	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0398	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1046	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0899	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4456	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0170	78.11
Cumene	May-20	Organic Liquids	0.0636	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.4889	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3833	84.16
Ethylbenzene	May-20	Organic Liquids	0.1352	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0346	106.17
Hexane (n)	May-20	Organic Liquids	2.3310	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0096	86.18
Hydrogen Sulfide	May-20	Organic Liquids	258.6615	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0216	34.08
Isoprene	May-20	Organic Liquids	8.8116	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0518	68.12
Naphthalene	May-20	Organic Liquids	0.0034	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4192	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0268	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0277	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0407	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1180	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0904	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.5783	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0167	78.11
Cumene	Jun-20	Organic Liquids	0.0716	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6223	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3758	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1509	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5316	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0094	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	271.1488	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0204	34.08
Isoprene	Jun-20	Organic Liquids	9.4498	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0500	68.12
Naphthalene	Jun-20	Organic Liquids	0.0039	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4625	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0266	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0314	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0416	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1319	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0909	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7527	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Jul-20	Organic Liquids	0.0825	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.7973	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3669	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1722	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.7935	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	286.8831	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0190	34.08
Isoprene	Jul-20	Organic Liquids	10.2695	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0479	68.12
Naphthalene	Jul-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5202	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50008 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0366	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0426	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1506	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8115	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Aug-20	Organic Liquids	0.0863	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8561	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3641	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1794	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Aug-20	Organic Liquids	2.8814	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	292.0289	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0186	34.08
Isoprene	Aug-20	Organic Liquids	10.5412	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0472	68.12
Naphthalene	Aug-20	Organic Liquids	0.0049	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5398	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0383	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0429	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1570	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7162	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0164	78.11
Cumene	Sep-20	Organic Liquids	0.0802	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7607	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3687	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1677	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7388	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0092	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	283.6482	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0193	34.08
Isoprene	Sep-20	Organic Liquids	10.0996	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0483	68.12
Naphthalene	Sep-20	Organic Liquids	0.0044	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5081	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0355	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0424	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1466	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0914	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.4912	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	Oct-20	Organic Liquids	0.0664	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5348	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3806	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1406	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4000	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	263.0060	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0211	34.08
Isoprene	Oct-20	Organic Liquids	9.0324	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0511	68.12
Naphthalene	Oct-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4340	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0290	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0410	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1227	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0906	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2640	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0531	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-50008 PTE
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3059	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3949	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1142	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0549	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	240.7406	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0236	34.08
Isoprene	Nov-20	Organic Liquids	7.9158	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0546	68.12
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3607	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0228	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0394	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.0995	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0896	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0876	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0433	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1276	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4079	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0945	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0340	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7845	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	222.2222	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0261	34.08
Isoprene	Dec-20	Organic Liquids	7.0170	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0580	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3048	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0184	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0379	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0823	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0886	106.17

Emissions Report

Tank	RFP NM-50008 PTE
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Domed External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	0.07	0.07	0.08	0.09	0.10	0.11	0.13	0.14	0.12	0.11	0.08	0.07	1.18
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Tank Construction	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Vapor Pressure Function [P*]	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	32.21	32.21	32.21	32.21	32.21	32.21	32.21	32.21	32.21	32.21	32.21	32.21	386.52
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	0.15	0.14	0.16	0.17	0.20	0.22	0.25	0.27	0.24	0.21	0.17	0.14	2.32
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	101.35	101.35	101.35	101.35	101.35	101.35	101.35	101.35	101.35	101.35	101.35	101.35	1,216.20
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Total Losses (lbs)	32.43	32.42	32.46	32.47	32.52	32.54	32.59	32.61	32.57	32.53	32.46	32.43	390.02

		Roof Fitting Loss Factors	
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	2	1.6	0.07
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.01
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1.28
Roof Drain (3-in. Diameter); 90% Closed (IFR, EFR, or DEFR)	1	1.8	0.04
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Sock (IFR, EFR, or DEFR)	14	1.2	0.38
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Sock (IFR, EFR, or DEFR)	12	0.49	0.13
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	0.25
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	0.14

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-518 EST
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate, Additives T-518	Jan-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Feb-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Mar-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Apr-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	May-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Jun-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Jul-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Aug-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Sep-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Oct-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Nov-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
Distillate, Additives T-518	Dec-20	210,000.00	VFR	11.00	17,772	White/White	Average	0.25	FALSE	Uninsulated
	Annual	2,520,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Jet kerosene	-	30.48	4.95	0.00	0.00	0.00	0.00	35.43
Benzene	00071-43-2	0.52	0.08	0.00	0.00	0.00	0.00	0.60
Cumene	00098-82-8	0.13	0.02	0.00	0.00	0.00	0.00	0.16
Cyclohexane	00110-82-7	11.68	1.89	0.00	0.00	0.00	0.00	13.57
Ethylbenzene	00100-41-4	1.06	0.17	0.00	0.00	0.00	0.00	1.23
Hexane (n)	00110-54-3	0.29	0.05	0.00	0.00	0.00	0.00	0.34
Hydrogen Sulfide	07783-06-4	0.66	0.11	0.00	0.00	0.00	0.00	0.77
Isoprene	00078-79-5	1.58	0.26	0.00	0.00	0.00	0.00	1.83
Naphthalene	00091-20-3	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Toluene	00108-88-3	0.82	0.13	0.00	0.00	0.00	0.00	0.95
Trimethylbenzene (1,2,4)	00095-63-6	1.24	0.20	0.00	0.00	0.00	0.00	1.44
Xylenes (mixed isomers)	01330-20-7	2.76	0.45	0.00	0.00	0.00	0.00	3.20

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-518 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	20.18	57.72	58.22	53.17	63.26	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	19.15	58.28	58.90	54.11	63.69	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	20.09	60.76	61.62	56.60	66.64	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	22.09	63.47	64.56	59.03	70.08	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.32	66.95	68.10	63.02	73.18	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.74	70.21	71.43	66.25	76.62	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	22.11	74.20	75.46	69.93	80.98	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	23.16	75.52	76.72	70.93	82.51	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	22.04	73.58	74.56	69.05	80.07	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	20.20	68.40	69.13	64.08	74.18	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	21.33	62.38	62.96	57.63	68.29	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	20.27	57.03	57.50	52.43	62.57	4.3	14.68
	Annual	64.51			1,598		65.71	66.60			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Jet kerosene	Jan-20	Petroleum Distillates	0.0078	0.0066	0.0092	0.0026	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Feb-20	Petroleum Distillates	0.0079	0.0068	0.0093	0.0025	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Mar-20	Petroleum Distillates	0.0087	0.0074	0.0102	0.0029	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Apr-20	Petroleum Distillates	0.0096	0.0080	0.0114	0.0034	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	May-20	Petroleum Distillates	0.0107	0.0091	0.0126	0.0035	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jun-20	Petroleum Distillates	0.0119	0.0101	0.0140	0.0039	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Jul-20	Petroleum Distillates	0.0135	0.0114	0.0161	0.0047	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Aug-20	Petroleum Distillates	0.0141	0.0117	0.0168	0.0051	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Sep-20	Petroleum Distillates	0.0132	0.0111	0.0156	0.0046	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Oct-20	Petroleum Distillates	0.0111	0.0094	0.0130	0.0036	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Nov-20	Petroleum Distillates	0.0091	0.0076	0.0108	0.0032	RVP=0.0287, ASTM Slope=4.431	130	162	7
Jet kerosene	Dec-20	Petroleum Distillates	0.0076	0.0064	0.0090	0.0026	RVP=0.0287, ASTM Slope=4.431	130	162	7
	Annual		0.0104					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.0141 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

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Emissions Report

Tank RFP NM-518 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Jet kerosene	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1142	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Jan-20	Organic Liquids	0.0447	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1546	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4058	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0975	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8255	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.1024	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0256	34.08
Isoprene	Jan-20	Organic Liquids	7.1549	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0574	68.12
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3132	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0190	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0382	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0848	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0888	106.17
Jet kerosene	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1356	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0178	78.11
Cumene	Feb-20	Organic Liquids	0.0459	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1762	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4041	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.0998	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0341	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8584	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0102	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.3898	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0253	34.08
Isoprene	Feb-20	Organic Liquids	7.2650	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0570	68.12
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3199	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0273	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0195	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0383	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0869	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0889	106.17
Jet kerosene	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2246	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0175	78.11
Cumene	Mar-20	Organic Liquids	0.0509	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2661	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3976	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1097	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0343	106.17
Hexane (n)	Mar-20	Organic Liquids	1.9948	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0100	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	236.7115	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0241	34.08
Isoprene	Mar-20	Organic Liquids	7.7179	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0553	68.12
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3481	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0272	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0218	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0391	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0956	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0894	106.17
Jet kerosene	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3269	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0173	78.11
Cumene	Apr-20	Organic Liquids	0.0567	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3694	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3907	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1214	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0345	106.17

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Emissions Report

Tank RFP NM-518 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1509	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0098	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	247.0719	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0229	34.08
Isoprene	Apr-20	Organic Liquids	8.2295	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0536	68.12
Naphthalene	Apr-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Apr-20	Organic Liquids	0.3808	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0270	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0245	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0399	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1059	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0899	106.17
Jet kerosene	May-20							
Benzene	May-20	Organic Liquids	1.4597	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0169	78.11
Cumene	May-20	Organic Liquids	0.0645	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	May-20	Organic Liquids	1.5031	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3825	84.16
Ethylbenzene	May-20	Organic Liquids	0.1368	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	May-20	Organic Liquids	2.3523	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0096	86.18
Hydrogen Sulfide	May-20	Organic Liquids	260.0094	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0215	34.08
Isoprene	May-20	Organic Liquids	8.8799	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0516	68.12
Naphthalene	May-20	Organic Liquids	0.0034	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	May-20	Organic Liquids	0.4238	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0268	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0281	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0408	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1195	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0905	106.17
Jet kerosene	Jun-20							
Benzene	Jun-20	Organic Liquids	1.5945	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0166	78.11
Cumene	Jun-20	Organic Liquids	0.0726	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6386	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3749	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1529	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0348	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5559	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0093	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	272.6395	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0202	34.08
Isoprene	Jun-20	Organic Liquids	9.5267	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0498	68.12
Naphthalene	Jun-20	Organic Liquids	0.0039	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jun-20	Organic Liquids	0.4679	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0266	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0319	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0417	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1336	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0910	106.17
Jet kerosene	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7708	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Jul-20	Organic Liquids	0.0837	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8154	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3660	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1744	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8206	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	288.4768	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0189	34.08
Isoprene	Jul-20	Organic Liquids	10.3535	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0477	68.12
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Jul-20	Organic Liquids	0.5262	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14

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Emissions Report

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0371	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0427	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1526	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0916	106.17
Jet kerosene	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8292	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0162	78.11
Cumene	Aug-20	Organic Liquids	0.0874	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0046	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8738	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3633	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1816	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0351	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9079	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0090	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	293.5663	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0185	34.08
Isoprene	Aug-20	Organic Liquids	10.6227	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0470	68.12
Naphthalene	Aug-20	Organic Liquids	0.0049	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Aug-20	Organic Liquids	0.5457	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0263	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0389	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0430	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1589	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0917	106.17
Jet kerosene	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7301	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0163	78.11
Cumene	Sep-20	Organic Liquids	0.0811	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0045	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7746	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3680	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1694	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0350	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7596	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0091	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	284.8813	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0192	34.08
Isoprene	Sep-20	Organic Liquids	10.1643	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0481	68.12
Naphthalene	Sep-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Sep-20	Organic Liquids	0.5127	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0264	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0359	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0425	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1481	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0915	106.17
Jet kerosene	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5005	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0168	78.11
Cumene	Oct-20	Organic Liquids	0.0669	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0044	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5441	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3801	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1417	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0347	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4140	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0095	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	263.8818	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0211	34.08
Isoprene	Oct-20	Organic Liquids	9.0770	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0510	68.12
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Oct-20	Organic Liquids	0.4371	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0267	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0292	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0411	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1237	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0907	106.17
Jet kerosene	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2703	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0174	78.11
Cumene	Nov-20	Organic Liquids	0.0534	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0043	120.19

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Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3123	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.3944	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1149	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0344	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0646	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0099	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.3830	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0235	34.08
Isoprene	Nov-20	Organic Liquids	7.9475	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0545	68.12
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3627	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0271	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0230	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0394	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1002	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0896	106.17
Jet kerosene	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0921	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0179	78.11
Cumene	Dec-20	Organic Liquids	0.0435	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0042	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1322	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.4075	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0950	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0340	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7914	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0103	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	222.7133	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0260	34.08
Isoprene	Dec-20	Organic Liquids	7.0405	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0579	68.12
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3062	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0274	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0185	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0380	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0827	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0886	106.17

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-518 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	0.31	0.27	0.34	0.40	0.41	0.45	0.56	0.60	0.52	0.42	0.36	0.30	4.95
Vapor Space Volume [VV] (ft^3)	1,579	1,579	1,579	1,579	1,579	1,579	1,579	1,579	1,579	1,579	1,579	1,579	
Vapor Space Outage [HVO] (ft)	16.61	16.61	16.61	16.61	16.61	16.61	16.61	16.61	16.61	16.61	16.61	16.61	
Shell Height [HS] (ft)	30	30	30	30	30	30	30	30	30	30	30	30	
Average Liquid Height [HL] (ft)	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	
Roof Outage [HRO] (ft)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
Roof Height [HR] (ft)	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.39	519.19	522.15	525.32	528.92	532.33	536.39	537.59	535.21	529.54	523.21	517.64	
Vapor Space Expansion Factor [KE]	0.0351	0.0330	0.0346	0.0383	0.0347	0.0352	0.0375	0.0394	0.0375	0.0344	0.0369	0.0353	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9932	0.9931	0.9924	0.9916	0.9906	0.9896	0.9882	0.9878	0.9885	0.9903	0.9921	0.9934	
Working Losses [LW] (lbs)	1.95	1.88	2.16	2.32	2.64	2.86	3.28	3.40	3.14	2.72	2.22	1.90	30.48
Working Loss Turnover (Saturation) Factor [KN]	0.3823	0.3614	0.3823	0.3753	0.3823	0.3753	0.3823	0.3823	0.3753	0.3823	0.3753	0.3823	
Annual Turnovers [N]	141.79	141.79	141.79	141.79	141.79	141.79	141.79	141.79	141.79	141.79	141.79	141.79	
Maximum Liquid Height [HLX] (ft)	26	26	26	26	26	26	26	26	26	26	26	26	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	2.26	2.15	2.50	2.72	3.05	3.31	3.84	4.01	3.66	3.14	2.58	2.21	35.43

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-55001 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-55001 (Lakewood)	Jan-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Feb-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Mar-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Apr-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	May-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Jun-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Jul-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Aug-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Sep-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Oct-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Nov-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55001 (Lakewood)	Dec-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	571.58	516.60	251.24	0.00	1,339.42
Benzene	00071-43-2	0.00	0.00	1.09	0.05	0.48	0.00	1.62
Cumene	00098-82-8	0.00	0.00	0.29	0.30	0.13	0.00	0.72
Cyclohexane	00110-82-7	0.00	0.00	24.53	1.13	10.82	0.00	36.48
Ethylbenzene	00100-41-4	0.00	0.00	2.27	1.13	1.00	0.00	4.39
Hexane (n)	00110-54-3	0.00	0.00	0.61	0.02	0.27	0.00	0.90
Hydrogen Sulfide	07783-06-4	0.00	0.00	1.34	0.00	0.59	0.00	1.93
Isoprene	00078-79-5	0.00	0.00	3.27	0.03	1.44	0.00	4.74
Naphthalene	00091-20-3	0.00	0.00	0.01	0.24	0.01	0.00	0.26
Toluene	00108-88-3	0.00	0.00	1.73	0.28	0.77	0.00	2.78
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	2.70	6.46	1.19	0.00	10.36
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	5.92	3.37	2.61	0.00	11.90

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ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-55001 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.26	58.86	59.38	55.07	63.70	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	16.95	59.70	60.34	56.10	64.58	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.63	62.74	63.64	58.98	68.29	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.04	65.97	67.11	61.84	72.37	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	19.94	69.58	70.79	65.80	75.77	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.56	73.02	74.30	69.16	79.44	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.72	77.09	78.40	72.97	83.83	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.29	78.27	79.52	73.95	85.09	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.58	75.83	76.86	71.71	82.00	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.22	70.09	70.86	66.30	75.42	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	18.45	63.70	64.31	59.70	68.92	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.22	58.11	58.60	54.29	62.90	4.3	14.68
	Annual	64.51			1,598		67.74	68.68			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-55001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1510	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0468	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1918	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0325	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1015	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0028	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8820	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	229.0213	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.3437	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Jan-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3247	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0199	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0884	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0072	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1821	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Feb-20	Organic Liquids	0.0485	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2232	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0334	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1050	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0029	106.17
Hexane (n)	Feb-20	Organic Liquids	1.9297	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	232.2949	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Feb-20	Organic Liquids	7.5024	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0047	68.12
Naphthalene	Feb-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3346	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0023	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0207	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0032	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0914	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0074	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2941	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Mar-20	Organic Liquids	0.0548	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.3363	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0365	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1176	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0032	106.17
Hexane (n)	Mar-20	Organic Liquids	2.1008	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	243.7858	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Mar-20	Organic Liquids	8.0663	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Mar-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3703	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0236	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0037	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1026	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0083	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.4214	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	Apr-20	Organic Liquids	0.0622	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Apr-20	Organic Liquids	1.4645	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0400	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1323	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0036	106.17

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Emissions Report

Tank RFP NM-55001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.2943	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	256.3320	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Apr-20	Organic Liquids	8.6938	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0054	68.12
Naphthalene	Apr-20	Organic Liquids	0.0033	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.4113	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0028	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0270	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0042	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1155	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0094	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.5676	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	May-20	Organic Liquids	0.0710	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.6116	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0440	84.16
Ethylbenzene	May-20	Organic Liquids	0.1497	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0041	106.17
Hexane (n)	May-20	Organic Liquids	2.5154	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	May-20	Organic Liquids	270.1594	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	May-20	Organic Liquids	9.3988	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0059	68.12
Naphthalene	May-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4590	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0311	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1307	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.7188	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0021	78.11
Cumene	Jun-20	Organic Liquids	0.0804	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jun-20	Organic Liquids	1.7632	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0481	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1680	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0046	106.17
Hexane (n)	Jun-20	Organic Liquids	2.7426	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	283.8747	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Jun-20	Organic Liquids	10.1115	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0063	68.12
Naphthalene	Jun-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.5089	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0034	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0355	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0055	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1469	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0119	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.9098	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Jul-20	Organic Liquids	0.0926	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Jul-20	Organic Liquids	1.9546	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0533	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1917	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0052	106.17
Hexane (n)	Jul-20	Organic Liquids	3.0282	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	300.4899	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Jul-20	Organic Liquids	10.9916	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0068	68.12
Naphthalene	Jul-20	Organic Liquids	0.0053	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5727	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0039	92.14

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Emissions Report

Tank RFP NM-55001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0414	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0064	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1679	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0136	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.9649	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Aug-20	Organic Liquids	0.0962	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	2.0096	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0548	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1987	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0054	106.17
Hexane (n)	Aug-20	Organic Liquids	3.1102	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0014	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	305.1443	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Aug-20	Organic Liquids	11.2412	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0070	68.12
Naphthalene	Aug-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5912	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0040	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0431	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0067	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1740	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0141	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.8358	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Sep-20	Organic Liquids	0.0878	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8805	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0513	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1825	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0050	106.17
Hexane (n)	Sep-20	Organic Liquids	2.9178	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	294.1416	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Sep-20	Organic Liquids	10.6532	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0066	68.12
Naphthalene	Sep-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5479	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0391	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0061	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1597	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0130	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5706	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0020	78.11
Cumene	Oct-20	Organic Liquids	0.0712	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6146	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0441	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1500	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0041	106.17
Hexane (n)	Oct-20	Organic Liquids	2.5200	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	270.4390	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Oct-20	Organic Liquids	9.4132	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0059	68.12
Naphthalene	Oct-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4600	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0312	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0049	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1311	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3180	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0562	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

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Emissions Report

Tank RFP NM-55001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3604	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0371	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1204	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17
Hexane (n)	Nov-20	Organic Liquids	2.1373	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	246.1827	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Nov-20	Organic Liquids	8.1852	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0051	68.12
Naphthalene	Nov-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3780	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0026	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0242	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0038	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1050	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0085	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1261	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0454	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1666	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0318	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0988	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8438	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	226.3783	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.2163	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3169	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0193	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0860	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0070	106.17

Emissions Report

Tank	RFP NM-55001 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	41.01	41.55	50.65	56.01	54.68	52.91	54.68	52.63	47.17	42.60	38.21	39.48	571.58
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	None	None	None	None	None	None	None	None	None	None	None	None	
Tank Construction	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	
Wind Speed Dependent Rim Seal Loss Factor (lbmol/mph^n ft yr)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Seal-Related Wind Speed Exponent	2	2	2	2	2	2	2	2	2	2	2	2	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	516.60
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	17.31	18.17	22.57	25.29	24.58	23.79	24.58	23.57	20.88	18.23	15.87	16.40	251.24
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	917.25	1066.43	1196.03	1385.02	1302.97	1302.97	1302.97	1249.15	1143.63	966.18	869.14	869.14	13,570.88
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Fitting Wind Speed Correction Factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Wind Speed (mph)	4.5	5.1	5.6	6.3	6	6	6	5.8	5.4	4.7	4.3	4.3	
Total Losses (lbs)	101.36	102.78	116.27	124.35	122.31	119.75	122.31	119.25	111.10	103.88	97.13	98.93	1,339.42

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	KFb (lbmol/(yr mph^n)	m	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0	0	0.36
Automatic Gauge Float Well; Unbolted Cover, Ungasketed (IFR, EFR, or DEFR)	1	14	5.4	1.1	8.22
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.02	0.97	0.12
Rim Vent; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.71	0.1	1	0.24
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Ungasketed (IFR, EFR, or DEFR)	19	2	0.37	0.91	13.62
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Ungasketed (IFR, EFR, or DEFR)	24	0.82	0.53	0.14	7.77
Unslotted Guide-Pole Well; Ungasketed Sliding Cover (IFR, EFR, or DEFR)	1	31	150	1.4	218.61
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.2	0.94	2.30

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-55002 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Distillate T-55002 (Lakewood)	Jan-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Feb-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Mar-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Apr-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	May-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Jun-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Jul-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Aug-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Sep-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Oct-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Nov-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
Distillate T-55002 (Lakewood)	Dec-20	21,000,000.00	EFR	115.00	2,310,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	252,000,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Renewable jet	-	0.00	0.00	571.58	516.60	251.24	0.00	1,339.42
Benzene	00071-43-2	0.00	0.00	1.09	0.05	0.48	0.00	1.62
Cumene	00098-82-8	0.00	0.00	0.29	0.30	0.13	0.00	0.72
Cyclohexane	00110-82-7	0.00	0.00	24.53	1.13	10.82	0.00	36.48
Ethylbenzene	00100-41-4	0.00	0.00	2.27	1.13	1.00	0.00	4.39
Hexane (n)	00110-54-3	0.00	0.00	0.61	0.02	0.27	0.00	0.90
Hydrogen Sulfide	07783-06-4	0.00	0.00	1.34	0.00	0.59	0.00	1.93
Isoprene	00078-79-5	0.00	0.00	3.27	0.03	1.44	0.00	4.74
Naphthalene	00091-20-3	0.00	0.00	0.01	0.24	0.01	0.00	0.26
Toluene	00108-88-3	0.00	0.00	1.73	0.28	0.77	0.00	2.78
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	2.70	6.46	1.19	0.00	10.36
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	5.92	3.37	2.61	0.00	11.90

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-55002 EST

Facility Paramount

Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	17.26	58.86	59.38	55.07	63.70	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	16.95	59.70	60.34	56.10	64.58	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	18.63	62.74	63.64	58.98	68.29	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.04	65.97	67.11	61.84	72.37	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	19.94	69.58	70.79	65.80	75.77	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.56	73.02	74.30	69.16	79.44	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.72	77.09	78.40	72.97	83.83	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.29	78.27	79.52	73.95	85.09	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.58	75.83	76.86	71.71	82.00	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.22	70.09	70.86	66.30	75.42	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	18.45	63.70	64.31	59.70	68.92	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	17.22	58.11	58.60	54.29	62.90	4.3	14.68
	Annual	64.51			1,598		67.74	68.68			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Renewable jet	Jan-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
Renewable jet	Feb-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Mar-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Apr-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	May-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jun-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Jul-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Aug-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Sep-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Oct-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP70=0.1, VP80=0.1	130	162	7
Renewable jet	Nov-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP60=0.1, VP70=0.1	130	162	7
Renewable jet	Dec-20	Petroleum Distillates	0.1000	0.1000	0.1000	0.0000	VP50=0.1, VP60=0.1	130	162	7
	Annual		0.1000					130.0	162.0	7.0

NSPS Kb Maximum True Vapor Pressure: 0.1000 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-55002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Renewable jet	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1510	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Jan-20	Organic Liquids	0.0468	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1918	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0325	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.1015	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0028	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8820	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	229.0213	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Jan-20	Organic Liquids	7.3437	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0046	68.12
Naphthalene	Jan-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3247	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0022	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0199	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0031	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0884	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0072	106.17
Renewable jet	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1821	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0015	78.11
Cumene	Feb-20	Organic Liquids	0.0485	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Feb-20	Organic Liquids	1.2232	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0334	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1050	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0029	106.17
Hexane (n)	Feb-20	Organic Liquids	1.9297	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	232.2949	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0021	34.08
Isoprene	Feb-20	Organic Liquids	7.5024	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0047	68.12
Naphthalene	Feb-20	Organic Liquids	0.0024	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3346	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0023	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0207	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0032	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0914	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0074	106.17
Renewable jet	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2941	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Mar-20	Organic Liquids	0.0548	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19
Cyclohexane	Mar-20	Organic Liquids	1.3363	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0365	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1176	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0032	106.17
Hexane (n)	Mar-20	Organic Liquids	2.1008	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	243.7858	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Mar-20	Organic Liquids	8.0663	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0050	68.12
Naphthalene	Mar-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3703	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0025	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0236	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0037	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.1026	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0083	106.17
Renewable jet	Apr-20							
Benzene	Apr-20	Organic Liquids	1.4214	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0018	78.11
Cumene	Apr-20	Organic Liquids	0.0622	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Apr-20	Organic Liquids	1.4645	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0400	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1323	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0036	106.17

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Emissions Report

Tank RFP NM-55002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.2943	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0010	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	256.3320	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0023	34.08
Isoprene	Apr-20	Organic Liquids	8.6938	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0054	68.12
Naphthalene	Apr-20	Organic Liquids	0.0033	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.4113	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0028	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0270	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0042	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1155	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0094	106.17
Renewable jet	May-20							
Benzene	May-20	Organic Liquids	1.5676	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0019	78.11
Cumene	May-20	Organic Liquids	0.0710	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	May-20	Organic Liquids	1.6116	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0440	84.16
Ethylbenzene	May-20	Organic Liquids	0.1497	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0041	106.17
Hexane (n)	May-20	Organic Liquids	2.5154	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	May-20	Organic Liquids	270.1594	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	May-20	Organic Liquids	9.3988	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0059	68.12
Naphthalene	May-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4590	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0311	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0048	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1307	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Jun-20							
Benzene	Jun-20	Organic Liquids	1.7188	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0021	78.11
Cumene	Jun-20	Organic Liquids	0.0804	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Jun-20	Organic Liquids	1.7632	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0481	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1680	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0046	106.17
Hexane (n)	Jun-20	Organic Liquids	2.7426	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0012	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	283.8747	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0025	34.08
Isoprene	Jun-20	Organic Liquids	10.1115	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0063	68.12
Naphthalene	Jun-20	Organic Liquids	0.0045	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.5089	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0034	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0355	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0055	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1469	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0119	106.17
Renewable jet	Jul-20							
Benzene	Jul-20	Organic Liquids	1.9098	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Jul-20	Organic Liquids	0.0926	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Jul-20	Organic Liquids	1.9546	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0533	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1917	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0052	106.17
Hexane (n)	Jul-20	Organic Liquids	3.0282	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	300.4899	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Jul-20	Organic Liquids	10.9916	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0068	68.12
Naphthalene	Jul-20	Organic Liquids	0.0053	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5727	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0039	92.14

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Emissions Report

Tank RFP NM-55002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0414	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0064	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1679	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0136	106.17
Renewable jet	Aug-20							
Benzene	Aug-20	Organic Liquids	1.9649	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0024	78.11
Cumene	Aug-20	Organic Liquids	0.0962	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0007	120.19
Cyclohexane	Aug-20	Organic Liquids	2.0096	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0548	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1987	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0054	106.17
Hexane (n)	Aug-20	Organic Liquids	3.1102	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0014	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	305.1443	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0027	34.08
Isoprene	Aug-20	Organic Liquids	11.2412	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0070	68.12
Naphthalene	Aug-20	Organic Liquids	0.0055	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5912	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0040	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0431	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0067	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1740	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0141	106.17
Renewable jet	Sep-20							
Benzene	Sep-20	Organic Liquids	1.8358	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0023	78.11
Cumene	Sep-20	Organic Liquids	0.0878	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0006	120.19
Cyclohexane	Sep-20	Organic Liquids	1.8805	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0513	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1825	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0050	106.17
Hexane (n)	Sep-20	Organic Liquids	2.9178	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0013	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	294.1416	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0026	34.08
Isoprene	Sep-20	Organic Liquids	10.6532	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0066	68.12
Naphthalene	Sep-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5479	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0037	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0391	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0061	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1597	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0130	106.17
Renewable jet	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5706	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0020	78.11
Cumene	Oct-20	Organic Liquids	0.0712	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0005	120.19
Cyclohexane	Oct-20	Organic Liquids	1.6146	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0441	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1500	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0041	106.17
Hexane (n)	Oct-20	Organic Liquids	2.5200	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0011	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	270.4390	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0024	34.08
Isoprene	Oct-20	Organic Liquids	9.4132	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0059	68.12
Naphthalene	Oct-20	Organic Liquids	0.0038	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4600	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0031	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0312	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0049	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1311	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0106	106.17
Renewable jet	Nov-20							
Benzene	Nov-20	Organic Liquids	1.3180	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0016	78.11
Cumene	Nov-20	Organic Liquids	0.0562	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0004	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-55002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3604	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0371	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1204	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0033	106.17
Hexane (n)	Nov-20	Organic Liquids	2.1373	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0009	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	246.1827	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0022	34.08
Isoprene	Nov-20	Organic Liquids	8.1852	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0051	68.12
Naphthalene	Nov-20	Organic Liquids	0.0029	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3780	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0026	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0242	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0038	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1050	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0085	106.17
Renewable jet	Dec-20							
Benzene	Dec-20	Organic Liquids	1.1261	A=6.906, B=1211, C=220.79	78.11	9.98E-05	0.0014	78.11
Cumene	Dec-20	Organic Liquids	0.0454	A=6.929, B=1455.8, C=207.2	120.19	0.000589	0.0003	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1666	A=6.845, B=1203.5, C=222.86	84.16	0.00219	0.0318	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0988	A=6.95, B=1419.3, C=212.61	106.17	0.00218	0.0027	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8438	A=6.878, B=1171.5, C=224.37	86.18	0.000035	0.0008	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	226.3783	A=7.40396697986706, B=958.587,	34.08	7.1E-07	0.0020	34.08
Isoprene	Dec-20	Organic Liquids	7.2163	A=6.091, B=706.9, C=186.1	68.12	0.00005	0.0045	68.12
Naphthalene	Dec-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.00047	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3169	A=7.017, B=1377.6, C=222.64	92.14	0.000544	0.0021	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0193	A=7.044, B=1573.3, C=208.56	120.19	0.0125	0.0030	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0860	A=7.009, B=1462.3, C=215.11	106.17	0.00652	0.0070	106.17

Emissions Report

Tank	RFP NM-55002 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - External Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	41.01	41.55	50.65	56.01	54.68	52.91	54.68	52.63	47.17	42.60	38.21	39.48	571.58
Primary Rim Seal	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	Mechanical Shoe	
Secondary Rim Seal	None	None	None	None	None	None	None	None	None	None	None	None	
Tank Construction	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	Riveted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	
Wind Speed Dependent Rim Seal Loss Factor (lbmol/mph^n ft yr)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Seal-Related Wind Speed Exponent	2	2	2	2	2	2	2	2	2	2	2	2	
Vapor Pressure Function [P*]	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	516.60
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Deck Fitting Losses [LF] (lbs)	17.31	18.17	22.57	25.29	24.58	23.79	24.58	23.57	20.88	18.23	15.87	16.40	251.24
Floating Roof Type	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	917.25	1066.43	1196.03	1385.02	1302.97	1302.97	1302.97	1249.15	1143.63	966.18	869.14	869.14	13,570.88
Vapor Molecular Weight (lb/lbmol)	130	130	130	130	130	130	130	130	130	130	130	130	
Fitting Wind Speed Correction Factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Wind Speed (mph)	4.5	5.1	5.6	6.3	6	6	6	5.8	5.4	4.7	4.3	4.3	
Total Losses (lbs)	101.36	102.78	116.27	124.35	122.31	119.75	122.31	119.25	111.10	103.88	97.13	98.93	1,339.42

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lbmol/yr)	KFb (lbmol/(yr mph^n)	m	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	0	0	0.36
Automatic Gauge Float Well; Unbolted Cover, Ungasketed (IFR, EFR, or DEFR)	1	14	5.4	1.1	8.22
Gauge-Hatch/Sample Port; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.47	0.02	0.97	0.12
Rim Vent; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	0.71	0.1	1	0.24
Roof Leg (30-in. Length); Adjustable, Pontoon Area, Ungasketed (IFR, EFR, or DEFR)	19	2	0.37	0.91	13.62
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Ungasketed (IFR, EFR, or DEFR)	24	0.82	0.53	0.14	7.77
Unslotted Guide-Pole Well; Ungasketed Sliding Cover (IFR, EFR, or DEFR)	1	31	150	1.4	218.61
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	1.2	0.94	2.30

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-6001 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Feed/Solvent T-6001	Jan-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Feb-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Mar-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Apr-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	May-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Jun-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Jul-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Aug-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Sep-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Oct-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Nov-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6001	Dec-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
	Annual	15,120,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Distillate fuel oil no. 2	-	209.86	45.25	0.00	0.00	0.00	0.00	255.11
Benzene	00071-43-2	2.42	0.52	0.00	0.00	0.00	0.00	2.94
Cumene	00098-82-8	0.32	0.07	0.00	0.00	0.00	0.00	0.39
Cyclohexane	00110-82-7	12.88	2.77	0.00	0.00	0.00	0.00	15.66
Ethylbenzene	00100-41-4	2.73	0.59	0.00	0.00	0.00	0.00	3.32
Hexane (n)	00110-54-3	9.15	1.97	0.00	0.00	0.00	0.00	11.12
Hydrogen Sulfide	07783-06-4	5.58	1.20	0.00	0.00	0.00	0.00	6.78
Isooctane	00540-84-1	8.93	1.92	0.00	0.00	0.00	0.00	10.86
Naphthalene	00091-20-3	0.06	0.01	0.00	0.00	0.00	0.00	0.07
Toluene	00108-88-3	5.73	1.24	0.00	0.00	0.00	0.00	6.97
Trimethylbenzene (1,2,4)	00095-63-6	2.63	0.57	0.00	0.00	0.00	0.00	3.20
Xylenes (mixed isomers)	01330-20-7	6.70	1.45	0.00	0.00	0.00	0.00	8.15

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-6001 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	19.23	57.72	58.34	53.53	63.15	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.43	58.28	59.05	54.44	63.66	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.61	60.76	61.83	56.93	66.73	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.75	63.47	64.82	59.38	70.26	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.20	66.95	68.38	63.33	73.43	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.68	70.21	71.73	66.56	76.90	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.98	74.20	75.76	70.27	81.26	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.88	75.52	77.01	71.29	82.73	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.57	73.58	74.80	69.40	80.19	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.56	68.40	69.31	64.42	74.20	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.39	62.38	63.10	58.00	68.19	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	19.27	57.03	57.61	52.80	62.43	4.3	14.68
	Annual	64.51			1,598		65.71	66.81			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Distillate fuel oil no. 2	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0020	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Apr-20	Petroleum Distillates	0.0076	0.0063	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0028	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Jun-20	Petroleum Distillates	0.0095	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Aug-20	Petroleum Distillates	0.0112	0.0093	0.0133	0.0040	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0085	0.0024	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0112 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-6001 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Distillate fuel oil no. 2	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1180	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0121	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1584	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0650	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8313	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0466	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5055	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0315	34.08
Isooctane	Jan-20	Organic Liquids	0.5682	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0443	114.23
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3143	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0279	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0117	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0313	106.17
Distillate fuel oil no. 2	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1404	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0121	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1810	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0647	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1003	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8657	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0464	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.8936	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0311	34.08
Isooctane	Feb-20	Organic Liquids	0.5800	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0442	114.23
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3214	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0278	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0118	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0314	106.17
Distillate fuel oil no. 2	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2316	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0119	78.11
Cumene	Mar-20	Organic Liquids	0.0512	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2733	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0637	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1105	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0129	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0055	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0455	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.4362	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0295	34.08
Isooctane	Mar-20	Organic Liquids	0.6283	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0437	114.23
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3503	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0277	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0120	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0963	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0316	106.17
Distillate fuel oil no. 2	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3364	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0117	78.11
Cumene	Apr-20	Organic Liquids	0.0572	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3790	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0626	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1225	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0130	106.17

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Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1654	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0446	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.0182	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0280	34.08
Isooctane	Apr-20	Organic Liquids	0.6840	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0432	114.23
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Apr-20	Organic Liquids	0.3839	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0275	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0247	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0123	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1068	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0318	106.17
Distillate fuel oil no. 2	May-20							
Benzene	May-20	Organic Liquids	1.4705	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0115	78.11
Cumene	May-20	Organic Liquids	0.0651	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	May-20	Organic Liquids	1.5140	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0613	84.16
Ethylbenzene	May-20	Organic Liquids	0.1381	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0130	106.17
Hexane (n)	May-20	Organic Liquids	2.3688	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0435	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.0461	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0263	34.08
Isooctane	May-20	Organic Liquids	0.7554	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0425	114.23
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	May-20	Organic Liquids	0.4273	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0273	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0126	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1206	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0320	106.17
Distillate fuel oil no. 2	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6070	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0113	78.11
Cumene	Jun-20	Organic Liquids	0.0734	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6511	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0601	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1544	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0131	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5748	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0425	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.7864	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0248	34.08
Isooctane	Jun-20	Organic Liquids	0.8284	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0419	114.23
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Jun-20	Organic Liquids	0.4720	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0271	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0128	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1349	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0322	106.17
Distillate fuel oil no. 2	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7848	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0111	78.11
Cumene	Jul-20	Organic Liquids	0.0846	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8294	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0587	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1761	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8416	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0414	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.7030	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0231	34.08
Isooctane	Jul-20	Organic Liquids	0.9239	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0412	114.23
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Jul-20	Organic Liquids	0.5309	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0269	92.14

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Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0375	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0131	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1541	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0324	106.17
Distillate fuel oil no. 2	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8428	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0110	78.11
Cumene	Aug-20	Organic Liquids	0.0883	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8875	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0582	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1833	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9283	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0410	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.7489	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0226	34.08
Isooctane	Aug-20	Organic Liquids	0.9551	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0410	114.23
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Aug-20	Organic Liquids	0.5502	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0268	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0132	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1605	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0325	106.17
Distillate fuel oil no. 2	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7408	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0111	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7853	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0590	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1707	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7757	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0416	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.8292	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0235	34.08
Isooctane	Sep-20	Organic Liquids	0.9002	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0414	114.23
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Sep-20	Organic Liquids	0.5162	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0270	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0131	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1493	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0323	106.17
Distillate fuel oil no. 2	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5076	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0114	78.11
Cumene	Oct-20	Organic Liquids	0.0673	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5513	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0609	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1425	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0131	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4248	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0432	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.5547	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0258	34.08
Isooctane	Oct-20	Organic Liquids	0.7752	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0424	114.23
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Oct-20	Organic Liquids	0.4394	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0273	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0126	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1244	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0320	106.17
Distillate fuel oil no. 2	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2752	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0118	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19

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Facility Paramount
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Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3172	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0632	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0129	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0720	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0451	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.8763	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0289	34.08
Isooctane	Nov-20	Organic Liquids	0.6514	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0435	114.23
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3642	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0276	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0121	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0317	106.17
Distillate fuel oil no. 2	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0956	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0122	78.11
Cumene	Dec-20	Organic Liquids	0.0437	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1357	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0653	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7968	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0469	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.0904	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0319	34.08
Isooctane	Dec-20	Organic Liquids	0.5564	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0445	114.23
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3073	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0279	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0117	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0313	106.17

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-6001 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	2.74	2.41	3.10	3.66	3.85	4.19	5.17	5.59	4.78	3.81	3.25	2.69	45.25
Vapor Space Volume [VV] (ft^3)	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	
Vapor Space Outage [HVO] (ft)	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	
Shell Height [HS] (ft)	40	40	40	40	40	40	40	40	40	40	40	40	
Average Liquid Height [HL] (ft)	17	17	17	17	17	17	17	17	17	17	17	17	
Roof Outage [HRO] (ft)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	
Roof Height [HR] (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.63	519.48	522.57	525.84	529.47	532.92	537.00	538.17	535.69	529.90	523.48	517.87	
Vapor Space Expansion Factor [KE]	0.0332	0.0316	0.0337	0.0376	0.0343	0.0350	0.0372	0.0388	0.0365	0.0331	0.0351	0.0333	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9925	0.9923	0.9916	0.9907	0.9896	0.9884	0.9869	0.9864	0.9873	0.9893	0.9912	0.9926	
Working Losses [LW] (lbs)	13.42	12.78	14.94	16.00	18.22	19.68	22.67	23.51	21.56	18.76	15.19	13.12	209.86
Working Loss Turnover (Saturation) Factor [KN]	0.5560	0.5183	0.5560	0.5434	0.5560	0.5434	0.5560	0.5560	0.5434	0.5560	0.5434	0.5560	
Annual Turnovers [N]	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	
Maximum Liquid Height [HLX] (ft)	33	33	33	33	33	33	33	33	33	33	33	33	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	16.16	15.20	18.04	19.66	22.07	23.88	27.85	29.11	26.34	22.57	18.44	15.81	255.11

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP NM-6002 EST

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Feed/Solvent T-6002	Jan-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Feb-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Mar-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Apr-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	May-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Jun-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Jul-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Aug-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Sep-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Oct-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Nov-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
Feed/Solvent T-6002	Dec-20	1,260,000.00	VFR	32.00	192,518	White/White	Average	0.25	FALSE	Uninsulated
	Annual	15,120,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Distillate fuel oil no. 2	-	209.86	45.25	0.00	0.00	0.00	0.00	255.11
Benzene	00071-43-2	2.42	0.52	0.00	0.00	0.00	0.00	2.94
Cumene	00098-82-8	0.32	0.07	0.00	0.00	0.00	0.00	0.39
Cyclohexane	00110-82-7	12.88	2.77	0.00	0.00	0.00	0.00	15.66
Ethylbenzene	00100-41-4	2.73	0.59	0.00	0.00	0.00	0.00	3.32
Hexane (n)	00110-54-3	9.15	1.97	0.00	0.00	0.00	0.00	11.12
Hydrogen Sulfide	07783-06-4	5.58	1.20	0.00	0.00	0.00	0.00	6.78
Isooctane	00540-84-1	8.93	1.92	0.00	0.00	0.00	0.00	10.86
Naphthalene	00091-20-3	0.06	0.01	0.00	0.00	0.00	0.00	0.07
Toluene	00108-88-3	5.73	1.24	0.00	0.00	0.00	0.00	6.97
Trimethylbenzene (1,2,4)	00095-63-6	2.63	0.57	0.00	0.00	0.00	0.00	3.20
Xylenes (mixed isomers)	01330-20-7	6.70	1.45	0.00	0.00	0.00	0.00	8.15

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APT 1.0

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AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-6002 EST
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	19.23	57.72	58.34	53.53	63.15	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	18.43	58.28	59.05	54.44	63.66	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.61	60.76	61.83	56.93	66.73	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.75	63.47	64.82	59.38	70.26	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.20	66.95	68.38	63.33	73.43	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.68	70.21	71.73	66.56	76.90	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.98	74.20	75.76	70.27	81.26	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.88	75.52	77.01	71.29	82.73	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.57	73.58	74.80	69.40	80.19	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	19.56	68.40	69.31	64.42	74.20	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	20.39	62.38	63.10	58.00	68.19	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	19.27	57.03	57.61	52.80	62.43	4.3	14.68
	Annual	64.51			1,598		65.71	66.81			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Distillate fuel oil no. 2	Jan-20	Petroleum Distillates	0.0061	0.0052	0.0072	0.0020	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Feb-20	Petroleum Distillates	0.0063	0.0054	0.0073	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Mar-20	Petroleum Distillates	0.0069	0.0059	0.0081	0.0022	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Apr-20	Petroleum Distillates	0.0076	0.0063	0.0090	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	May-20	Petroleum Distillates	0.0085	0.0072	0.0100	0.0028	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Jun-20	Petroleum Distillates	0.0095	0.0080	0.0111	0.0031	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Jul-20	Petroleum Distillates	0.0107	0.0090	0.0127	0.0037	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Aug-20	Petroleum Distillates	0.0112	0.0093	0.0133	0.0040	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Sep-20	Petroleum Distillates	0.0104	0.0088	0.0123	0.0035	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Oct-20	Petroleum Distillates	0.0088	0.0075	0.0102	0.0027	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Nov-20	Petroleum Distillates	0.0072	0.0061	0.0085	0.0024	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
Distillate fuel oil no. 2	Dec-20	Petroleum Distillates	0.0060	0.0051	0.0070	0.0019	RVP=0.02263, ASTM Slope=4.895	130	188	7.1
	Annual		0.0083					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0112 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-6002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Distillate fuel oil no. 2	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1180	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0121	78.11
Cumene	Jan-20	Organic Liquids	0.0450	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1584	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0650	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0979	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8313	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0466	86.18
Hydrogen Sulfide	Jan-20	Organic Liquids	225.5055	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0315	34.08
Isooctane	Jan-20	Organic Liquids	0.5682	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0443	114.23
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Jan-20	Organic Liquids	0.3143	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0279	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0191	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0117	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0852	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0313	106.17
Distillate fuel oil no. 2	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1404	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0121	78.11
Cumene	Feb-20	Organic Liquids	0.0462	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1810	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0647	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1003	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8657	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0464	86.18
Hydrogen Sulfide	Feb-20	Organic Liquids	227.8936	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0311	34.08
Isooctane	Feb-20	Organic Liquids	0.5800	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0442	114.23
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Feb-20	Organic Liquids	0.3214	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0278	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0197	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0118	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0874	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0314	106.17
Distillate fuel oil no. 2	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2316	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0119	78.11
Cumene	Mar-20	Organic Liquids	0.0512	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2733	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0637	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1105	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0129	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0055	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0455	86.18
Hydrogen Sulfide	Mar-20	Organic Liquids	237.4362	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0295	34.08
Isooctane	Mar-20	Organic Liquids	0.6283	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0437	114.23
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Mar-20	Organic Liquids	0.3503	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0277	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0220	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0120	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0963	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0316	106.17
Distillate fuel oil no. 2	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3364	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0117	78.11
Cumene	Apr-20	Organic Liquids	0.0572	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3790	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0626	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1225	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0130	106.17

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Emissions Report

Tank RFP NM-6002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1654	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0446	86.18
Hydrogen Sulfide	Apr-20	Organic Liquids	248.0182	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0280	34.08
Isooctane	Apr-20	Organic Liquids	0.6840	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0432	114.23
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Apr-20	Organic Liquids	0.3839	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0275	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0247	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0123	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1068	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0318	106.17
Distillate fuel oil no. 2	May-20							
Benzene	May-20	Organic Liquids	1.4705	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0115	78.11
Cumene	May-20	Organic Liquids	0.0651	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	May-20	Organic Liquids	1.5140	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0613	84.16
Ethylbenzene	May-20	Organic Liquids	0.1381	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0130	106.17
Hexane (n)	May-20	Organic Liquids	2.3688	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0435	86.18
Hydrogen Sulfide	May-20	Organic Liquids	261.0461	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0263	34.08
Isooctane	May-20	Organic Liquids	0.7554	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0425	114.23
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	May-20	Organic Liquids	0.4273	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0273	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0284	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0126	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1206	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0320	106.17
Distillate fuel oil no. 2	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6070	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0113	78.11
Cumene	Jun-20	Organic Liquids	0.0734	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6511	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0601	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1544	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0131	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5748	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0425	86.18
Hydrogen Sulfide	Jun-20	Organic Liquids	273.7864	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0248	34.08
Isooctane	Jun-20	Organic Liquids	0.8284	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0419	114.23
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Jun-20	Organic Liquids	0.4720	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0271	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0323	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0128	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1349	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0322	106.17
Distillate fuel oil no. 2	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7848	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0111	78.11
Cumene	Jul-20	Organic Liquids	0.0846	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8294	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0587	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1761	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8416	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0414	86.18
Hydrogen Sulfide	Jul-20	Organic Liquids	289.7030	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0231	34.08
Isooctane	Jul-20	Organic Liquids	0.9239	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0412	114.23
Naphthalene	Jul-20	Organic Liquids	0.0047	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Jul-20	Organic Liquids	0.5309	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0269	92.14

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Emissions Report

Tank RFP NM-6002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0375	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0131	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1541	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0324	106.17
Distillate fuel oil no. 2	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8428	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0110	78.11
Cumene	Aug-20	Organic Liquids	0.0883	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8875	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0582	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1833	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9283	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0410	86.18
Hydrogen Sulfide	Aug-20	Organic Liquids	294.7489	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0226	34.08
Isooctane	Aug-20	Organic Liquids	0.9551	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0410	114.23
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Aug-20	Organic Liquids	0.5502	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0268	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0393	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0132	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1605	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0325	106.17
Distillate fuel oil no. 2	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7408	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0111	78.11
Cumene	Sep-20	Organic Liquids	0.0818	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0016	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7853	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0590	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1707	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0132	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7757	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0416	86.18
Hydrogen Sulfide	Sep-20	Organic Liquids	285.8292	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0235	34.08
Isooctane	Sep-20	Organic Liquids	0.9002	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0414	114.23
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Sep-20	Organic Liquids	0.5162	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0270	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0362	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0131	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1493	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0323	106.17
Distillate fuel oil no. 2	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5076	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0114	78.11
Cumene	Oct-20	Organic Liquids	0.0673	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5513	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0609	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1425	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0131	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4248	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0432	86.18
Hydrogen Sulfide	Oct-20	Organic Liquids	264.5547	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0258	34.08
Isooctane	Oct-20	Organic Liquids	0.7752	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0424	114.23
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0003	128.17
Toluene	Oct-20	Organic Liquids	0.4394	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0273	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0294	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0126	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1244	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0320	106.17
Distillate fuel oil no. 2	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2752	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0118	78.11
Cumene	Nov-20	Organic Liquids	0.0537	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP NM-6002 EST
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3172	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0632	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1155	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0129	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0720	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0451	86.18
Hydrogen Sulfide	Nov-20	Organic Liquids	241.8763	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0289	34.08
Isooctane	Nov-20	Organic Liquids	0.6514	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0435	114.23
Naphthalene	Nov-20	Organic Liquids	0.0027	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Nov-20	Organic Liquids	0.3642	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0276	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0231	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0121	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1007	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0317	106.17
Distillate fuel oil no. 2	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0956	A=6.906, B=1211, C=220.79	78.11	0.000046	0.0122	78.11
Cumene	Dec-20	Organic Liquids	0.0437	A=6.929, B=1455.8, C=207.2	120.19	0.000138	0.0015	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1357	A=6.845, B=1203.5, C=222.86	84.16	0.000238	0.0653	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0954	A=6.95, B=1419.3, C=212.61	106.17	0.000555	0.0128	106.17
Hexane (n)	Dec-20	Organic Liquids	1.7968	A=6.878, B=1171.5, C=224.37	86.18	0.000108	0.0469	86.18
Hydrogen Sulfide	Dec-20	Organic Liquids	223.0904	A=7.40396697986706, B=958.587,	34.08	5.92E-07	0.0319	34.08
Isooctane	Dec-20	Organic Liquids	0.5564	A=6.812, B=1257.8, C=220.74	114.23	0.000331	0.0445	114.23
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.000451	0.0002	128.17
Toluene	Dec-20	Organic Liquids	0.3073	A=7.017, B=1377.6, C=222.64	92.14	0.000376	0.0279	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0026	0.0117	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0830	A=7.009, B=1462.3, C=215.11	106.17	0.00156	0.0313	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP NM-6002 EST
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	2.74	2.41	3.10	3.66	3.85	4.19	5.17	5.59	4.78	3.81	3.25	2.69	45.25
Vapor Space Volume [VV] (ft^3)	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	18,766	
Vapor Space Outage [HVO] (ft)	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	
Shell Height [HS] (ft)	40	40	40	40	40	40	40	40	40	40	40	40	
Average Liquid Height [HL] (ft)	17	17	17	17	17	17	17	17	17	17	17	17	
Roof Outage [HRO] (ft)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	
Roof Height [HR] (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0001	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.63	519.48	522.57	525.84	529.47	532.92	537.00	538.17	535.69	529.90	523.48	517.87	
Vapor Space Expansion Factor [KE]	0.0332	0.0316	0.0337	0.0376	0.0343	0.0350	0.0372	0.0388	0.0365	0.0331	0.0351	0.0333	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9925	0.9923	0.9916	0.9907	0.9896	0.9884	0.9869	0.9864	0.9873	0.9893	0.9912	0.9926	
Working Losses [LW] (lbs)	13.42	12.78	14.94	16.00	18.22	19.68	22.67	23.51	21.56	18.76	15.19	13.12	209.86
Working Loss Turnover (Saturation) Factor [KN]	0.5560	0.5183	0.5560	0.5434	0.5560	0.5434	0.5560	0.5560	0.5434	0.5560	0.5434	0.5560	
Annual Turnovers [N]	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	78.54	
Maximum Liquid Height [HLX] (ft)	33	33	33	33	33	33	33	33	33	33	33	33	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	16.16	15.20	18.04	19.66	22.07	23.88	27.85	29.11	26.34	22.57	18.44	15.81	255.11

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APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-2014
Facility	Paramount
Site Location	Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Flare Knockout Product T-2014	Jan-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Feb-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Mar-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Apr-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	May-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Jun-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Jul-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Aug-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Sep-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Oct-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Nov-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
Flare Knockout Product T-2014	Dec-20	2,310,000.00	IFR	30.00	84,000	White/White	Average	0.25	FALSE	Uninsulated
	Annual	27,720,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Gasoline (TVP 10.99)	-	0.00	0.00	197.28	180.08	2,494.09	0.00	2,871.44
Benzene	00071-43-2	0.00	0.00	0.21	1.05	2.66	0.00	3.92
Cumene	00098-82-8	0.00	0.00	0.00	0.03	0.00	0.00	0.03
Cyclohexane	00110-82-7	0.00	0.00	0.08	0.40	1.03	0.00	1.51
Ethylbenzene	00100-41-4	0.00	0.00	0.01	0.74	0.17	0.00	0.92
Hexane (n)	00110-54-3	0.00	0.00	1.74	5.40	21.98	0.00	29.12
Isooctane	00540-84-1	0.00	0.00	1.15	11.24	14.57	0.00	26.96
Methyl alcohol	00067-56-1	0.00	0.00	0.01	0.03	0.11	0.00	0.15
Naphthalene	00091-20-3	0.00	0.00	0.00	0.34	0.00	0.00	0.34
Toluene	00108-88-3	0.00	0.00	0.20	3.48	2.55	0.00	6.23
Trimethylbenzene (1,2,4)	00095-63-6	0.00	0.00	0.02	5.33	0.26	0.00	5.61
Xylenes (mixed isomers)	01330-20-7	0.00	0.00	0.21	12.59	2.60	0.00	15.40

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-2014
Facility	Paramount
Site Location	Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.04	57.72	58.43	53.91	62.94	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.54	58.28	59.16	54.77	63.54	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.02	60.76	61.98	57.23	66.74	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.32	63.47	65.01	59.68	70.34	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.04	66.95	68.58	63.57	73.59	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.61	70.21	71.95	66.79	77.10	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.83	74.20	75.98	70.53	81.44	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.52	75.52	77.22	71.59	82.85	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	20.97	73.58	74.97	69.73	80.21	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.75	68.40	69.44	64.75	74.13	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.22	62.38	63.20	58.39	68.00	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.03	57.03	57.70	53.19	62.21	4.3	14.68
	Annual	64.51			1,598		65.71	66.97			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Gasoline (TVP 10.99)	Jan-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Feb-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
Gasoline (TVP 10.99)	Mar-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Apr-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	May-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jun-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Jul-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Aug-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Sep-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP70=10.99, VP80=10.99	66	92	5.6
Gasoline (TVP 10.99)	Oct-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Nov-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP60=10.99, VP70=10.99	66	92	5.6
Gasoline (TVP 10.99)	Dec-20	Petroleum Distillates	10.9900	10.9900	10.9900	0.0000	VP50=10.99, VP60=10.99	66	92	5.6
	Annual		10.9900					66.0	92.0	5.6

NSPS Kb Maximum True Vapor Pressure: 10.9900 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-2014

Facility Paramount

Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Gasoline (TVP 10.99)	Jan-20							
Benzene	Jan-20	Organic Liquids	1.1207	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Jan-20	Organic Liquids	0.0451	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jan-20	Organic Liquids	1.1612	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Jan-20	Organic Liquids	0.0982	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jan-20	Organic Liquids	1.8355	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0070	86.18
Isooctane	Jan-20	Organic Liquids	0.5697	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0045	114.23
Methyl alcohol	Jan-20	Organic Liquids	1.4057	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jan-20	Organic Liquids	0.0022	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jan-20	Organic Liquids	0.3152	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Jan-20	Organic Liquids	0.0192	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jan-20	Organic Liquids	0.0855	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Feb-20							
Benzene	Feb-20	Organic Liquids	1.1438	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Feb-20	Organic Liquids	0.0464	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Feb-20	Organic Liquids	1.1845	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Feb-20	Organic Liquids	0.1007	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Feb-20	Organic Liquids	1.8710	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0071	86.18
Isooctane	Feb-20	Organic Liquids	0.5819	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0046	114.23
Methyl alcohol	Feb-20	Organic Liquids	1.4381	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Feb-20	Organic Liquids	0.0023	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Feb-20	Organic Liquids	0.3225	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Feb-20	Organic Liquids	0.0198	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Feb-20	Organic Liquids	0.0877	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0008	106.17
Gasoline (TVP 10.99)	Mar-20							
Benzene	Mar-20	Organic Liquids	1.2368	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Mar-20	Organic Liquids	0.0515	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Mar-20	Organic Liquids	1.2784	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Mar-20	Organic Liquids	0.1111	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Mar-20	Organic Liquids	2.0134	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0077	86.18
Isooctane	Mar-20	Organic Liquids	0.6311	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0050	114.23
Methyl alcohol	Mar-20	Organic Liquids	1.5697	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Mar-20	Organic Liquids	0.0026	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Mar-20	Organic Liquids	0.3520	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Mar-20	Organic Liquids	0.0221	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Mar-20	Organic Liquids	0.0968	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Apr-20							
Benzene	Apr-20	Organic Liquids	1.3434	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0010	78.11
Cumene	Apr-20	Organic Liquids	0.0576	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Apr-20	Organic Liquids	1.3860	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Apr-20	Organic Liquids	0.1233	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17

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Emissions Report

Tank RFP M-2014
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 2)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Hexane (n)	Apr-20	Organic Liquids	2.1759	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0083	86.18
Isooctane	Apr-20	Organic Liquids	0.6877	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0054	114.23
Methyl alcohol	Apr-20	Organic Liquids	1.7222	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Apr-20	Organic Liquids	0.0030	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Apr-20	Organic Liquids	0.3861	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Apr-20	Organic Liquids	0.0249	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Apr-20	Organic Liquids	0.1075	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0010	106.17
Gasoline (TVP 10.99)	May-20							
Benzene	May-20	Organic Liquids	1.4785	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	May-20	Organic Liquids	0.0656	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	May-20	Organic Liquids	1.5220	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	May-20	Organic Liquids	0.1391	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	May-20	Organic Liquids	2.3808	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0091	86.18
Isooctane	May-20	Organic Liquids	0.7597	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0060	114.23
Methyl alcohol	May-20	Organic Liquids	1.9178	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	May-20	Organic Liquids	0.0035	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	May-20	Organic Liquids	0.4299	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	May-20	Organic Liquids	0.0286	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	May-20	Organic Liquids	0.1214	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Jun-20							
Benzene	Jun-20	Organic Liquids	1.6161	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0012	78.11
Cumene	Jun-20	Organic Liquids	0.0740	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jun-20	Organic Liquids	1.6603	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jun-20	Organic Liquids	0.1555	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jun-20	Organic Liquids	2.5885	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0098	86.18
Isooctane	Jun-20	Organic Liquids	0.8333	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0066	114.23
Methyl alcohol	Jun-20	Organic Liquids	2.1196	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Jun-20	Organic Liquids	0.0040	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jun-20	Organic Liquids	0.4750	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0012	92.14
Trimethylbenzene (1,2,4)	Jun-20	Organic Liquids	0.0325	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jun-20	Organic Liquids	0.1359	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0012	106.17
Gasoline (TVP 10.99)	Jul-20							
Benzene	Jul-20	Organic Liquids	1.7950	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Jul-20	Organic Liquids	0.0852	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Jul-20	Organic Liquids	1.8396	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Jul-20	Organic Liquids	0.1774	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Jul-20	Organic Liquids	2.8568	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0109	86.18
Isooctane	Jul-20	Organic Liquids	0.9293	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0074	114.23
Methyl alcohol	Jul-20	Organic Liquids	2.3853	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Jul-20	Organic Liquids	0.0048	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Jul-20	Organic Liquids	0.5343	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14

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Emissions Report

Tank RFP M-2014
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 3)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Trimethylbenzene (1,2,4)	Jul-20	Organic Liquids	0.0378	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Jul-20	Organic Liquids	0.1552	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Aug-20							
Benzene	Aug-20	Organic Liquids	1.8528	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0014	78.11
Cumene	Aug-20	Organic Liquids	0.0889	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Aug-20	Organic Liquids	1.8975	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Aug-20	Organic Liquids	0.1846	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Aug-20	Organic Liquids	2.9432	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0112	86.18
Isooctane	Aug-20	Organic Liquids	0.9605	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0076	114.23
Methyl alcohol	Aug-20	Organic Liquids	2.4720	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Aug-20	Organic Liquids	0.0050	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Aug-20	Organic Liquids	0.5536	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0014	92.14
Trimethylbenzene (1,2,4)	Aug-20	Organic Liquids	0.0396	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Aug-20	Organic Liquids	0.1616	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0014	106.17
Gasoline (TVP 10.99)	Sep-20							
Benzene	Sep-20	Organic Liquids	1.7486	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0013	78.11
Cumene	Sep-20	Organic Liquids	0.0823	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Sep-20	Organic Liquids	1.7931	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0005	84.16
Ethylbenzene	Sep-20	Organic Liquids	0.1717	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Sep-20	Organic Liquids	2.7874	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0106	86.18
Isooctane	Sep-20	Organic Liquids	0.9044	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0072	114.23
Methyl alcohol	Sep-20	Organic Liquids	2.3160	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0001	32.04
Naphthalene	Sep-20	Organic Liquids	0.0046	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Sep-20	Organic Liquids	0.5188	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0013	92.14
Trimethylbenzene (1,2,4)	Sep-20	Organic Liquids	0.0364	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Sep-20	Organic Liquids	0.1501	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0013	106.17
Gasoline (TVP 10.99)	Oct-20							
Benzene	Oct-20	Organic Liquids	1.5128	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0011	78.11
Cumene	Oct-20	Organic Liquids	0.0677	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Oct-20	Organic Liquids	1.5565	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Oct-20	Organic Liquids	0.1431	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Oct-20	Organic Liquids	2.4327	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0093	86.18
Isooctane	Oct-20	Organic Liquids	0.7780	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0062	114.23
Methyl alcohol	Oct-20	Organic Liquids	1.9679	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Oct-20	Organic Liquids	0.0036	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Oct-20	Organic Liquids	0.4411	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0011	92.14
Trimethylbenzene (1,2,4)	Oct-20	Organic Liquids	0.0296	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Oct-20	Organic Liquids	0.1250	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0011	106.17
Gasoline (TVP 10.99)	Nov-20							
Benzene	Nov-20	Organic Liquids	1.2787	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0009	78.11
Cumene	Nov-20	Organic Liquids	0.0539	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19

Print Date: 2/11/2022

Emissions Report

Tank RFP M-2014
Facility Paramount
Site Location Paramount, California

Chemical Component Composition (Page 4)

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Cyclohexane	Nov-20	Organic Liquids	1.3208	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0004	84.16
Ethylbenzene	Nov-20	Organic Liquids	0.1159	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0001	106.17
Hexane (n)	Nov-20	Organic Liquids	2.0774	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0079	86.18
Isooctane	Nov-20	Organic Liquids	0.6533	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0052	114.23
Methyl alcohol	Nov-20	Organic Liquids	1.6295	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Nov-20	Organic Liquids	0.0028	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Nov-20	Organic Liquids	0.3654	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0009	92.14
Trimethylbenzene (1,2,4)	Nov-20	Organic Liquids	0.0232	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Nov-20	Organic Liquids	0.1010	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0009	106.17
Gasoline (TVP 10.99)	Dec-20							
Benzene	Dec-20	Organic Liquids	1.0981	A=6.906, B=1211, C=220.79	78.11	0.00584	0.0008	78.11
Cumene	Dec-20	Organic Liquids	0.0439	A=6.929, B=1455.8, C=207.2	120.19	0.000173	0.0000	120.19
Cyclohexane	Dec-20	Organic Liquids	1.1383	A=6.845, B=1203.5, C=222.86	84.16	0.00221	0.0003	84.16
Ethylbenzene	Dec-20	Organic Liquids	0.0957	A=6.95, B=1419.3, C=212.61	106.17	0.00409	0.0000	106.17
Hexane (n)	Dec-20	Organic Liquids	1.8007	A=6.878, B=1171.5, C=224.37	86.18	0.03	0.0069	86.18
Isooctane	Dec-20	Organic Liquids	0.5577	A=6.812, B=1257.8, C=220.74	114.23	0.0624	0.0044	114.23
Methyl alcohol	Dec-20	Organic Liquids	1.3740	A=8.079, B=1581.3, C=239.65	32.04	0.000181	0.0000	32.04
Naphthalene	Dec-20	Organic Liquids	0.0021	A=7.146, B=1831.6, C=211.82	128.17	0.0019	0.0000	128.17
Toluene	Dec-20	Organic Liquids	0.3081	A=7.017, B=1377.6, C=222.64	92.14	0.0193	0.0008	92.14
Trimethylbenzene (1,2,4)	Dec-20	Organic Liquids	0.0186	A=7.044, B=1573.3, C=208.56	120.19	0.0296	0.0001	120.19
Xylenes (mixed isomers)	Dec-20	Organic Liquids	0.0833	A=7.009, B=1462.3, C=215.11	106.17	0.0699	0.0007	106.17

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-2014
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Internal Floating Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Rim Seal Losses [LR] (lbs)	16.76	15.13	16.76	16.21	16.76	16.21	16.76	16.76	16.21	16.76	16.21	16.76	197.28
Primary Rim Seal	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	Liquid-mounted	
Secondary Rim Seal	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	Rim-mounted	
Zero Wind Speed Rim Seal Loss Factor (lbmol/ft yr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Vapor Pressure Function [P*]	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	0.3321	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Product Factor [KC]	1	1	1	1	1	1	1	1	1	1	1	1	
Withdrawal Losses [LWD] (lbs)	15.01	15.01	15.01	15.01	15.01	15.01	15.01	15.01	15.01	15.01	15.01	15.01	180.08
Shell Clingage Factor [CS] (bbl/1,000 ft^2)	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	
Internal Shell Condition	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	Light Rust	
Number of Support Columns [NC]	1	1	1	1	1	1	1	1	1	1	1	1	
Effective Column Diameter [FC] (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Deck Fitting Losses [LF] (lbs)	211.83	191.33	211.83	204.99	211.83	204.99	211.83	211.83	204.99	211.83	204.99	211.83	2,494.09
Total Deck Fitting Loss Factor [FF] (lbmol/yr)	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	113.78	1,365.36
Vapor Molecular Weight (lb/lbmol)	66	66	66	66	66	66	66	66	66	66	66	66	
Deck Seam Losses [LD] (lbs) (Bolted IFR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deck Type	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	Welded	
Deck Seam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Deck Seam Loss Per Unit Seam Length Factor (lbmol/ft yr)	0	0	0	0	0	0	0	0	0	0	0	0	
Deck Seam Length Factor (ft/ft^2)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Losses (lbs)	243.59	221.47	243.59	236.21	243.59	236.21	243.59	243.59	236.21	243.59	236.21	243.59	2,871.44

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lbmol/yr)	Losses (lbs/yr)
Access Hatch; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	1.6	35.07
Automatic Gauge Float Well; Bolted Cover, Gasketed (IFR, EFR, or DEFR)	1	2.8	61.38
Column Well; Built-Up Col.-Sliding Cover, Gask. (IFR w/ column-supported fixed roof)	1	33	723.37
Ladder Well; Sliding Cover, Gasketed (IFR, EFR, or DEFR)	1	56	1,227.53
Roof Leg (48-in. Length); Adjustable, Center Area or Double-Deck Roofs, Gasketed (IFR, EFR, or DEFR)	6	0.53	69.71
Slotted Guide-Pole/Sample Well; Gask Sliding Covr, w. Float,Sleeve,Wiper (IFR, EFR, or DEFR)	1	11	241.12
Vacuum Breaker; Weighted Mech. Actuation, Gask. (IFR, EFR, or DEFR)	1	6.2	135.91

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-20001

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Oil Recovery T-20001	Jan-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Feb-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Mar-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Apr-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	May-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Jun-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Jul-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Aug-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Sep-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Oct-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Nov-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20001	Dec-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
	Annual	421,848,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Bleaching Clay Recovered Oil	-	10,285.15	585.22	0.00	0.00	0.00	0.00	10,870.37
Hexane (n)	00110-54-3	0.82	0.05	0.00	0.00	0.00	0.00	0.87

Print Date: 2/11/2022

Emissions Report

Tank RFP M-20001
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.35	57.72	58.45	53.86	63.04	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.77	58.28	59.19	54.74	63.63	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.17	60.76	62.02	57.23	66.82	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.43	63.47	65.07	59.71	70.42	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.08	66.95	68.64	63.62	73.66	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.63	70.21	72.01	66.85	77.16	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.87	74.20	76.05	70.58	81.51	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.61	75.52	77.28	71.62	82.93	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.13	73.58	75.02	69.74	80.30	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.96	68.40	69.48	64.74	74.22	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.52	62.38	63.23	58.35	68.11	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.35	57.03	57.72	53.13	62.31	4.3	14.68
	Annual	64.51			1,598		65.71	67.01			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Bleaching Clay Recovered Oil	Jan-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Feb-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Mar-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Apr-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	May-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Jun-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Jul-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Aug-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Sep-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Oct-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Nov-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Dec-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
	Annual		0.0370					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0370 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-20001
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Bleaching Clay Recovered Oil	Jan-20							
Hexane (n)	Jan-20	Organic Liquids	1.8367	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Feb-20							
Hexane (n)	Feb-20	Organic Liquids	1.8724	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Mar-20							
Hexane (n)	Mar-20	Organic Liquids	2.0156	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Apr-20							
Hexane (n)	Apr-20	Organic Liquids	2.1789	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	May-20							
Hexane (n)	May-20	Organic Liquids	2.3842	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Jun-20							
Hexane (n)	Jun-20	Organic Liquids	2.5923	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Jul-20							
Hexane (n)	Jul-20	Organic Liquids	2.8611	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Aug-20							
Hexane (n)	Aug-20	Organic Liquids	2.9474	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Sep-20							
Hexane (n)	Sep-20	Organic Liquids	2.7906	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Oct-20							
Hexane (n)	Oct-20	Organic Liquids	2.4349	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Nov-20							
Hexane (n)	Nov-20	Organic Liquids	2.0789	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Dec-20							
Hexane (n)	Dec-20	Organic Liquids	1.8018	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-20001
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	46.82	40.65	48.44	52.43	49.65	48.84	53.00	54.75	49.60	46.43	47.64	46.98	585.22
Vapor Space Volume [VV] (ft^3)	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	
Vapor Space Outage [HVO] (ft)	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	
Shell Height [HS] (ft)	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	
Average Liquid Height [HL] (ft)	20	20	20	20	20	20	20	20	20	20	20	20	
Roof Outage [HRO] (ft)	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	
Roof Height [HR] (ft)	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0009	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.85	519.76	522.96	526.33	529.99	533.48	537.56	538.71	536.13	530.23	523.74	518.08	
Vapor Space Expansion Factor [KE]	0.0313	0.0301	0.0326	0.0367	0.0339	0.0347	0.0367	0.0380	0.0354	0.0317	0.0332	0.0314	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	
Working Losses [LW] (lbs)	875.79	855.02	868.91	857.01	857.38	845.53	845.31	843.51	841.35	856.99	861.24	877.10	10,285.15
Working Loss Turnover (Saturation) Factor [KN]	0.2157	0.2110	0.2157	0.2141	0.2157	0.2141	0.2157	0.2157	0.2141	0.2157	0.2141	0.2157	
Annual Turnovers [N]	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	
Maximum Liquid Height [HLX] (ft)	32	32	32	32	32	32	32	32	32	32	32	32	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	922.61	895.67	917.35	909.43	907.03	894.37	898.31	898.26	890.95	903.43	908.88	924.07	10,870.37

Print Date: 2/11/2022

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank RFP M-20002

Facility Paramount

Site Location Paramount, California

Tank Identification and Physical Characteristics

Tank Description	Month	Throughput (gal)	Tank Type	Diameter (ft)	Working Volume (gal)	Shell Color/ Shade	Shell Condition	Paint Solar Absorp. Factor	Heated Tank	Underground or Jacketed
Oil Recovery T-20002	Jan-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Feb-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Mar-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Apr-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	May-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Jun-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Jul-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Aug-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Sep-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Oct-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Nov-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
Oil Recovery T-20002	Dec-20	35,154,000.00	VFR	60.00	676,822	White/White	Average	0.25	FALSE	Uninsulated
	Annual	421,848,000.00								

Emissions Summary

Chemical Component	CAS Number	Fixed Roof Tank Losses		Floating Roof Tank Losses				Total Emissions (lbs/yr)
		Working Loss (lbs/yr)	Breathing Loss (lbs/yr)	Rim Seal Loss (lbs/yr)	Withdrawal Loss (lbs/yr)	Deck Fitting Loss (lbs/yr)	Deck Seam Loss (lbs/yr)	
Bleaching Clay Recovered Oil	-	10,285.15	585.22	0.00	0.00	0.00	0.00	10,870.37
Hexane (n)	00110-54-3	0.82	0.05	0.00	0.00	0.00	0.00	0.87

Print Date: 2/11/2022

Emissions Report

Tank RFP M-20002
Facility Paramount
Site Location Paramount, California

Meteorological Data

Meteorological Data Set	Month	Daily Ambient Temperature (deg F) Avg.	Min.	Max.	Daily Total Solar Insulation Factor (Btu/ft^2 day)	Daily Vapor Temp Range (deg F)	Liquid Bulk Temp (deg F)	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Wind Speed (mph)	Ambient Pressure (psia)
Long Beach, CA	Jan-20	57.05	47.60	66.50	894	18.35	57.72	58.45	53.86	63.04	4.5	14.68
Long Beach, CA	Feb-20	57.45	49.00	65.90	1,109	17.77	58.28	59.19	54.74	63.63	5.1	14.68
Long Beach, CA	Mar-20	59.60	51.50	67.70	1,548	19.17	60.76	62.02	57.23	66.82	5.6	14.68
Long Beach, CA	Apr-20	62.00	53.60	70.40	1,958	21.43	63.47	65.07	59.71	70.42	6.3	14.68
Long Beach, CA	May-20	65.40	58.20	72.60	2,066	20.08	66.95	68.64	63.62	73.66	6	14.68
Long Beach, CA	Jun-20	68.55	61.40	75.70	2,207	20.63	70.21	72.01	66.85	77.16	6	14.68
Long Beach, CA	Jul-20	72.50	64.70	80.30	2,264	21.87	74.20	76.05	70.58	81.51	6	14.68
Long Beach, CA	Aug-20	73.90	65.30	82.50	2,156	22.61	75.52	77.28	71.62	82.93	5.8	14.68
Long Beach, CA	Sep-20	72.25	63.50	81.00	1,767	21.13	73.58	75.02	69.74	80.30	5.4	14.68
Long Beach, CA	Oct-20	67.40	58.80	76.00	1,327	18.96	68.40	69.48	64.74	74.22	4.7	14.68
Long Beach, CA	Nov-20	61.60	51.80	71.40	1,039	19.52	62.38	63.23	58.35	68.11	4.3	14.68
Long Beach, CA	Dec-20	56.40	46.80	66.00	843	18.35	57.03	57.72	53.13	62.31	4.3	14.68
	Annual	64.51			1,598		65.71	67.01			5.3	14.68

Liquid Contents of Storage Tank

Material Stored	Month	Material Type	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Pressure Range (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Mol. Weight (lb/lbmol)	Avg. Liquid Density (lb/gal)
Bleaching Clay Recovered Oil	Jan-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Feb-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Mar-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Apr-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	May-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Jun-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Jul-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Aug-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Sep-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP70=0.037, VP80=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Oct-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Nov-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP60=0.037, VP70=0.037	130	188	7.1
Bleaching Clay Recovered Oil	Dec-20	Petroleum Distillates	0.0370	0.0370	0.0370	0.0000	VP50=0.037, VP60=0.037	130	188	7.1
	Annual		0.0370					130.0	188.0	7.1

NSPS Kb Maximum True Vapor Pressure: 0.0370 psia (vapor pressure at the highest calendar-month average of the liquid storage temperature)

Print Date: 2/11/2022

Emissions Report

Tank RFP M-20002
Facility Paramount
Site Location Paramount, California

Chemical Component Composition

Chemical Component	Month	Material Type	Vapor Pressure (psia)	Basis for Vapor Pressure Calculations	Vapor Mol. Weight (lb/lbmol)	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight (lb/lbmol)
Bleaching Clay Recovered Oil	Jan-20							
Hexane (n)	Jan-20	Organic Liquids	1.8367	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Feb-20							
Hexane (n)	Feb-20	Organic Liquids	1.8724	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Mar-20							
Hexane (n)	Mar-20	Organic Liquids	2.0156	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Apr-20							
Hexane (n)	Apr-20	Organic Liquids	2.1789	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	May-20							
Hexane (n)	May-20	Organic Liquids	2.3842	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Jun-20							
Hexane (n)	Jun-20	Organic Liquids	2.5923	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Jul-20							
Hexane (n)	Jul-20	Organic Liquids	2.8611	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Aug-20							
Hexane (n)	Aug-20	Organic Liquids	2.9474	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Sep-20							
Hexane (n)	Sep-20	Organic Liquids	2.7906	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Oct-20							
Hexane (n)	Oct-20	Organic Liquids	2.4349	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Nov-20							
Hexane (n)	Nov-20	Organic Liquids	2.0789	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18
Bleaching Clay Recovered Oil	Dec-20							
Hexane (n)	Dec-20	Organic Liquids	1.8018	A=6.878, B=1171.5, C=224.37	86.18	8.81E-07	0.0001	86.18

APT 1.0

ASHWORTH LEININGER GROUP

AP-42 Tanks: Version 1.0 (02/01/21)

Organic Liquid Storage Tank Emissions Calculation Spreadsheet Tool following EPA AP-42 Chapter 7

Emissions Report

Tank	RFP M-20002
Facility	Paramount
Site Location	Paramount, California

Detail Calculations (AP-42) - Vertical Fixed Roof Tanks

Month	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Annual
Standing Storage Losses [LS] (lbs)	46.82	40.65	48.44	52.43	49.65	48.84	53.00	54.75	49.60	46.43	47.64	46.98	585.22
Vapor Space Volume [VV] (ft^3)	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	58,090	
Vapor Space Outage [HVO] (ft)	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	
Shell Height [HS] (ft)	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	39.92	
Average Liquid Height [HL] (ft)	20	20	20	20	20	20	20	20	20	20	20	20	
Roof Outage [HRO] (ft)	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	
Roof Height [HR] (ft)	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	
Fixed Roof Type	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	
Roof Slope (ft/ft) (Coned VFR)	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
Roof Radius (ft) (Domed VFR)	0	0	0	0	0	0	0	0	0	0	0	0	
Vapor Density [WV] (lbs/ft^3)	0.0009	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	
Paint Solar Absorptance Factor [α], Shell	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Paint Solar Absorptance Factor [α], Roof	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Roof Color/Shade	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	White/White	
Roof Condition	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	
Average Vapor Temperature [TV] (R)	518.85	519.76	522.96	526.33	529.99	533.48	537.56	538.71	536.13	530.23	523.74	518.08	
Vapor Space Expansion Factor [KE]	0.0313	0.0301	0.0326	0.0367	0.0339	0.0347	0.0367	0.0380	0.0354	0.0317	0.0332	0.0314	
Breather Vent Pressure Setting [PBP] (psig)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Breather Vent Vacuum Setting [PBV] (psig)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	
Vented Vapor Saturation Factor [KS]	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	0.9613	
Working Losses [LW] (lbs)	875.79	855.02	868.91	857.01	857.38	845.53	845.31	843.51	841.35	856.99	861.24	877.10	10,285.15
Working Loss Turnover (Saturation) Factor [KN]	0.2157	0.2110	0.2157	0.2141	0.2157	0.2141	0.2157	0.2157	0.2141	0.2157	0.2141	0.2157	
Annual Turnovers [N]	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	623.28	
Maximum Liquid Height [HLX] (ft)	32	32	32	32	32	32	32	32	32	32	32	32	
Working Loss Product Factor [KP]	1	1	1	1	1	1	1	1	1	1	1	1	
Vent Setting Correction Factor [KB]	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Pressure of Vapor Space (PI) (psig)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total Losses (lbs)	922.61	895.67	917.35	909.43	907.03	894.37	898.31	898.26	890.95	903.43	908.88	924.07	10,870.37

Print Date: 2/11/2022

Emissions Report
Total Emissions Summary - All Tanks in Report

Emissions Report:

Tank Identification				Losses (lbs)
RFP M-10005	Paramount	Internal Floating Roof Tank	Paramount, California	3,600.72
RFP M-25001	Paramount	Internal Floating Roof Tank	Paramount, California	4,004.60
RFP M-25003	Paramount	Internal Floating Roof Tank	Paramount, California	4,004.60
RFP M-25004	Paramount	Internal Floating Roof Tank	Paramount, California	4,004.60
RFP M-25005	Paramount	Internal Floating Roof Tank	Paramount, California	4,015.12
RFP M-25009	Paramount	Internal Floating Roof Tank	Paramount, California	3,947.60
RFP M-35001	Paramount	Internal Floating Roof Tank	Paramount, California	603.68
RFP M-50001	Paramount	Internal Floating Roof Tank	Paramount, California	8,153.03
RFP M-50002	Paramount	Internal Floating Roof Tank	Paramount, California	8,153.03
RFP N-150001	Paramount	Vertical Fixed Roof Tank	Paramount, California	9,593.68
RFP NM-1000 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	198.22
RFP NM-10001 EST	Paramount	Internal Floating Roof Tank	Paramount, California	590.28
RFP NM-10006 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	697.28
RFP NM-10007 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	697.28
RFP NM-10008 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	721.70
RFP NM-10009 EST	Paramount	Internal Floating Roof Tank	Paramount, California	590.28
RFP NM-12501 EST	Paramount	Internal Floating Roof Tank	Paramount, California	669.59
RFP NM-12502 EST	Paramount	Internal Floating Roof Tank	Paramount, California	669.59
RFP NM-20003 EST	Paramount	External Floating Roof Tank	Paramount, California	450.51
RFP NM-20004 EST	Paramount	External Floating Roof Tank	Paramount, California	450.51
RFP M-20005	Paramount	Internal Floating Roof Tank	Paramount, California	439.16
RFP NM-242 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	135.22
RFP NM-25002 EST	Paramount	Internal Floating Roof Tank	Paramount, California	4,004.60
RFP NM-25006 EST	Paramount	Internal Floating Roof Tank	Paramount, California	5,220.73
RFP NM-25007 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	1,832.34
RFP NM-25008 EST	Paramount	Internal Floating Roof Tank	Paramount, California	411.38
RFP NM-3001 PTE	Paramount	Internal Floating Roof Tank	Paramount, California	769.62
RFP NM-50003 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	3,685.55
RFP NM-50004 EST	Paramount	External Floating Roof Tank	Paramount, California	732.55
RFP NM-50005 PTE	Paramount	Vertical Fixed Roof Tank	Paramount, California	3,733.11
RFP NM-50006 PTE	Paramount	Vertical Fixed Roof Tank	Paramount, California	3,733.11
RFP NM-50008 PTE	Paramount	Domed External Floating Roof Tank	Paramount, California	390.02
RFP NM-518 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	35.43
RFP NM-55001 EST	Paramount	External Floating Roof Tank	Paramount, California	1,339.42
RFP NM-55002 EST	Paramount	External Floating Roof Tank	Paramount, California	1,339.42
RFP NM-6001 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	255.11
RFP NM-6002 EST	Paramount	Vertical Fixed Roof Tank	Paramount, California	255.11
RFP M-2014	Paramount	Internal Floating Roof Tank	Paramount, California	2,871.44
RFP M-20001	Paramount	Vertical Fixed Roof Tank	Paramount, California	10,870.37
RFP M-20002	Paramount	Vertical Fixed Roof Tank	Paramount, California	10,870.37
Total Emissions for all Tanks:				108,739.98

Print Date: 2/11/2022

ATTACHMENT C. CRITERIA POLLUTANT AIR QUALITY IMPACT ANALYSIS

Paramount Petroleum AltAir Paramount Renewable Fuels Project SCAQMD Facility ID 187165

Criteria Pollutant Air Quality Impact Analysis

Prepared by:

Ashworth Leininger Group
601 East Daily Drive, Suite 302
Camarillo, California 93010
(805) 764-6010

In coordination with

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
(714) 632-8521

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1.0 EXECUTIVE SUMMARY

Paramount Petroleum AltAir Paramount (Paramount), a wholly owned subsidiary of World Energy, proposes to complete the conversion of the Paramount Refinery to a Renewable Fuels Facility. In 2013, portions of the refinery were converted from processing crude oil and other petroleum products to renewable diesel, jet fuel, and naphtha production from renewable feedstocks like vegetable oils and tallow. The project will convert the remainder of the Paramount Refinery into a renewable fuels production facility, eliminating the refining of crude oil. Criteria pollutant modeling was conducted to support the Subsequent Environmental Impact Report (EIR) prepared by the City of Paramount for this project. The purpose of the analysis is to determine if project emissions comply with ambient air quality standards.

This analysis demonstrates that project impacts associated with nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) are expected to be less than significant. The complete criteria pollutant modeling analysis is presented below.

2.0 INTRODUCTION

Paramount Petroleum AltAir Paramount is located in the city of Paramount. Figure 1 and Figure 2, below, show the facility location. The complete address is as follows:

Paramount Petroleum AltAir Paramount
14700 Downey Avenue
Paramount, CA 90723
SCAQMD Facility ID #187165

Figure 1. General Location Map

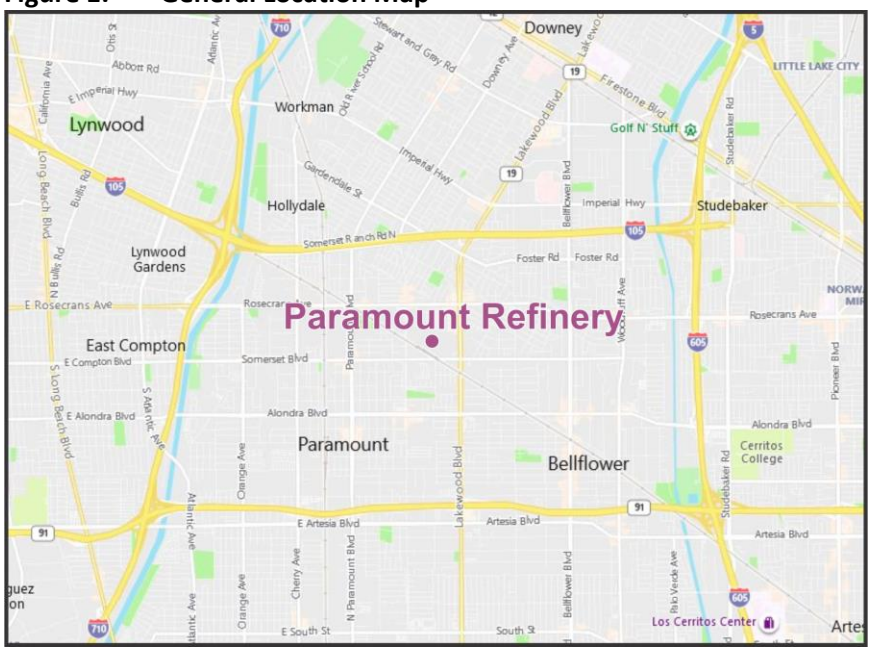
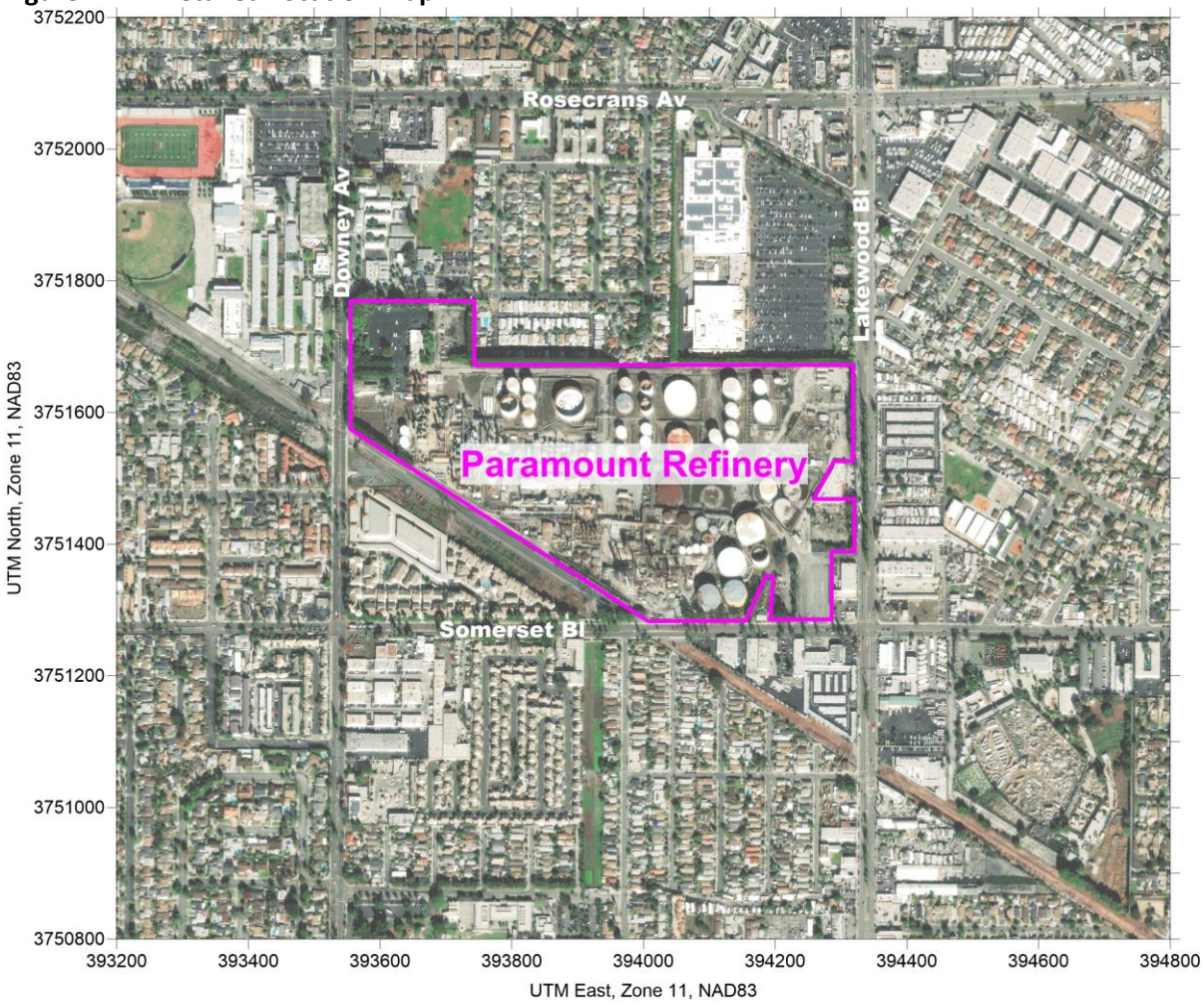


Figure 2. Detailed Location Map



2.1 Significance Criteria

The criteria pollutants of concern are:

- Nitrogen Dioxide (NO_2)
- Carbon Monoxide (CO)
- Sulfur Dioxide (SO_2)
- Respirable Particulate Matter less than 10 microns (PM_{10})
- Fine Particulate Matter less than 2.5 microns ($PM_{2.5}$)

Table 1 shows the basis upon which the significance of modeled criteria pollutant impacts is evaluated. If the pollutant is in attainment for ambient air quality standards (AAQS), then the maximum impact is added to a representative maximum background concentration derived from ambient monitoring, and the total concentration is compared to the most stringent AAQS. A total concentration greater than the AAQS is a significant impact. If the pollutant is not in attainment

(i.e., PM_{10} and $PM_{2.5}$), then the impact is significant if the modeled impact is greater than the South Coast Air Quality Management District (SCAQMD) Significant Change Threshold.

Table 1. Ambient Air Quality Standards for Criteria Pollutants and SCAQMD Air Quality Significance Thresholds

Pollutant	Averaging Period	SCAQMD Significant Change (µg/m³)	Most Stringent Ambient Air Quality Standard (µg/m³)
NO_2	1-hr	--[a]	339 (California) 188 (Federal)
	Annual	--[a]	57
CO	1-hr	--[a]	23,000
	8-hr	--[a]	10,000
SO_2	1-hr	--[a]	655 (California) 196 (Federal)
	3-hr	--[a]	1300 (Federal)
	24-hr	--[a]	105
PM_{10}	24-hr	2.5	50[b]
	Annual	1.0	20[b]
$PM_{2.5}$	24-hr	2.5	35[b]

[a] SCAQMD is in attainment for these pollutants and averaging periods.

[b] SCAQMD is not in attainment of these standards.

3.0 MODELING APPROACH

3.1 Emissions Assessment

The relevant project emission sources of criteria pollutants are:

- Boilers
- Heaters
- Incinerators
- Cogeneration turbine and duct burner
- Flares
- Pretreatment Unit filter media transfers (PM emissions only)
- Onsite truck traffic

The emission sources listed above represent the components of this project that result in emission increases of criteria pollutants with AAQSs. Notably, there will be a substantial reduction in criteria pollutant emissions from the shutdown of several heaters, upgrades to combustion unit NOx control technologies, upgrades to cooling tower drift elimination systems, conversion to an electric rail car mover, as well as the shutdown of asphalt production operations; however, reductions in emissions are not considered in this modeling analysis. Volatile organic chemical (VOC) emission increases (and decreases) associated with process unit and piping fugitive components, load racks, and

storage tanks will also occur as a result of this project, but there are no AAQSs for VOCs and no criteria pollutant modeling is required.

3.2 Air Dispersion Model and Inputs

The AERMOD (v. 21112) air dispersion model, the model currently preferred by U.S. EPA and accepted by the SCAQMD, was used for this analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting concentrations at specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts from any combination of point, area, and volume sources in terrain ranging from flat to complex.

3.2.1 Emission Inputs

As explained above, for stationary source criteria pollutant modeling, only emission increases associated with the project were modeled and any reductions were excluded from this analysis. For each stationary source, emission rates for short-term modeling (1-hr, 8-hr, and 24-hr) were based on the daily pre- to post-project increase, and emission rates for long-term modeling (annual) were based on the annual pre- to post-project increase. For combustion sources, startup, shutdown and commissioning emissions were included in the analysis. Emission rates used in the modeling are shown in Table 2.

Onsite truck traffic (mobile source emissions) occurs 24 hours per day and was modeled assuming continuous emissions. Modeling of criteria pollutants for 1-hr, 8-hr, and 24-hr averaging times was based on the maximum daily emission rates, and modeling of annual averages was based on annual average emission rates. Modeled emission rates for the truck traffic are shown in Table 3.

3.2.2 Source Release Parameters

Project stationary sources were modeled using the release parameters summarized in Table 4 and Table 5 for stationary sources. The stationary source locations are plotted in Figure 3.

Truck traffic emissions were modeled as a string of volume sources along the roads traveled by trucks within the facility. There will be four primary routes taken by trucks depending on their destination in the facility (LPG rack, Key rack, Pretreatment Unit, and Feed Stock). Emissions for each of the four routes were calculated based on the number of trucks anticipated to use each route. Then the calculated emissions for the individual route were divided equally among the volume sources that make up that route. Volume source parameters and spacing were based on typical values for a typical vehicle per U.S. EPA guidance[1] and are shown in Table 5.

[1] Memorandum from Tyler Fox, Leader, Air Quality Modeling Group, C439-01 to Regional Office Modeling Contacts, Haul Road Workgroup Final Report Submission to EPA-OAQPS, March 2, 2012.

Table 2. Stationary Source Emission Rate Increases

Source Description	Source ID	Nitrogen Oxides		Sulfur Dioxide		Carbon Monoxide		PM_{10}		$PM_{2.5}$	
		(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
Boiler No. 7	B7	0.811	0.0	0.332	2,498.4	3.29	11,604.2	0.332	984.3	0.325	963.6
Boiler No. 8	B8	0.811	893.6	0.332	2,388.5	3.29	14,107.8	0.332	2,486.4	0.325	2,434.2
Boiler No. 9	B9	-	-	0.369	3,229.7	4.617	19,692.9	0.338	2,962.6	0.331	2,900.4
Heater 101 (vents to H501/502 stack)	H101	0.434	47.2	-	132.4	-	-	-	-	-	-
Heater 102 (vents to H501/502 stack)	H102	0.764	428.2	-	352.7	-	-	-	-	-	-
Heater 907 and 908 (common stack)	H907_908	2.453	8,629.4	4.52	33,184.9	3.846	30,804.1	0.579	3,746.7	0.579	3,746.7
Heater H-151 (H2 plant)	H151	6.557	37,577.2	0.861	6,842.6	6.654	45,118.9	4.412	38,647.1	4.319	37,835.5
Heater H-350 (vents to SCR common stack to H-351)	H350	4.007	8,869.5	0.287	2,513.4	2.218	19,389.2	0.441	3,864.7	0.432	3,783.5
Heater H-351 (vents to SCR common stack to H-350)	H351	3.643	6,406.3	0.287	2,513.4	2.218	19,067.1	0.441	3,864.7	0.432	3,783.5
Heaters 401 and 402 (common stack)	H401_402	0.559	-	-	-	0.865	7,576.5	0.085	885.8	0.089	885.8
Heaters 501 and 502 (common stack)	H501_502	0.892	-	0.105	986.8	0.804	7,235.3	0.067	772.4	0.066	756.2
New flare	NEWFLARE	0.043	379.7	0.00020	1.8	0.012	102.2	0.003	21.9	0.003	21.9
Pretreat unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	-	-	-	-	-	-	0.011	94.0	0.011	94.0
H2 plant venting	H2VENT	-	-	-	-	0.00022	1.9	-	-	-	-

Note: "-" denotes cases when the project resulted in no emissions increase or an emissions decrease.

Table 3. Onsite Truck Traffic Emission Rate Increases

Source Description	Source ID	Nitrogen Oxides		Sulfur Dioxide		Carbon Monoxide		PM_{10}		$PM_{2.5}$	
		(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
LPG	TRK_001-TRK_086	5.18E-02	266.0	1.16E-04	0.6	3.80E-02	195.0	2.26E-03	11.6	3.20E-04	1.6
Key Rack	TRK_087-TRK_154, TRK_208-TRK_220	3.58E-01	1,838.1	8.04E-04	4.1	2.62E-01	1,347.2	1.56E-02	80.2	2.21E-03	11.3
Feed Stock	TRK_180-TRK_207, TRK_236-TRK_247	4.71E-02	241.9	1.06E-04	0.5	3.45E-02	177.3	2.05E-03	10.5	2.91E-04	1.5
Pretreatment Unit	TRK_155-TRK_179, TRK_221-TRK_235	1.41E-02	72.6	3.17E-05	0.2	1.04E-02	53.2	6.16E-04	3.2	8.72E-05	0.4
Total		**4.71E-01**	**2,418.6**	**1.06E-03**	**5.4**	**3.45E-01**	**1,772.6**	**2.05E-02**	**105.5**	**2.91E-03**	**14.9**

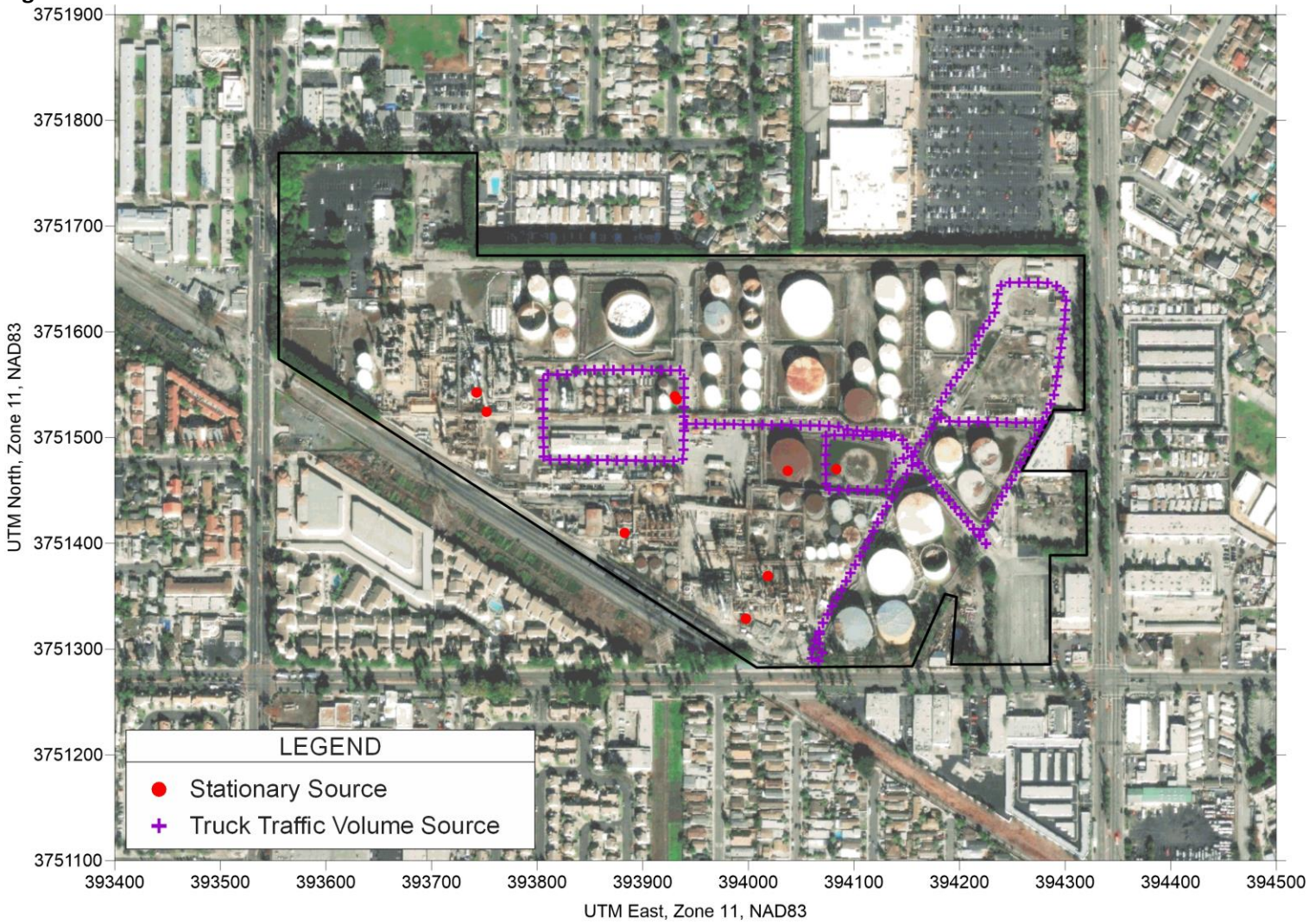
Table 4. Project POINT Source Parameters

Source Description	Stack ID	Stack Height		Stack Gas Exit Temperature		Stack Gas Exit Velocity		Stack Gas Exit Flow Rate		Stack Diameter		UTM Coordinates (NAD83)		Base Elevation	Stack Release Type
		(ft)	(m)	(°F)	(K)	(ft/s)	(m/s)	(ft^3/m)	(m^3/s)	(ft)	(m)	East (m)	North (m)	(m)	
Boiler No. 7	B7	100.0	30.5	520.0	544.3	21.8	6.6	65747.3	31.0	8.0	2.4	393997.9	3751328.9	23.47	Vertical
Boiler No. 8	B8	100.0	30.5	520.0	544.3	21.8	6.6	65747.3	31.0	8.0	2.4	393997.9	3751328.9	23.47	Vertical
Boiler No. 9	B9	100.0	30.5	520.0	544.3	21.8	6.6	65747.3	31.0	8.0	2.4	393997.9	3751328.9	23.47	Vertical
Heaters 401 and 402 (common stack)	H401_402	150.0	45.7	500.0	533.2	19.7	6.0	8355.1	3.9	3.0	0.9	393751.9	3751524.5	23.47	Vertical
Heater 907 and 908 (common stack)	H907_908	39.0	11.9	500.0	533.2	94.1	28.7	39526.1	18.7	3.0	0.9	393883.0	3751410.0	23.47	Vertical
Heater 102 (vents to H501/502 stack)	H102	50.8	15.5	725.1	658.2	5.2	1.6	12004.7	5.7	7.0	2.1	393742.4	3751542.5	23.47	Vertical
Heater 101 (vents to H501/502 stack)	H101	50.8	15.5	725.1	658.2	5.2	1.6	12004.7	5.7	7.0	2.1	393742.4	3751542.5	23.47	Vertical
Heaters 501 and 502 (common stack)	H501_502	50.8	15.5	725.1	658.2	5.2	1.6	12004.7	5.7	7.0	2.1	393742.4	3751542.5	23.47	Vertical
Heater H-350 (vents to SCR common stack to H-351)	H350	100.0	30.5	600.0	588.7	20.9	6.4	48226.0	22.8	7.0	2.1	394018.4	3751369.1	23.47	Vertical
Heater H-351 (vents to SCR common stack to H-350)	H351	100.0	30.5	600.0	588.7	20.9	6.4	48226.0	22.8	7.0	2.1	394018.4	3751369.1	23.47	Vertical
Heater H-151 (H2 plant)	H151	100.0	30.5	280.0	410.9	29.8	9.1	169672.0	80.1	11.0	3.4	393932.0	3751536.0	23.77	Vertical
New flare	NEWFLARE	135.0	41.1	240.0	388.7	1343.0	409.3	142396.6	67.2	1.5	0.5	394037.3	3751468.4	23.77	Vertical
Pretreat unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	50.0	15.2	-459.7	0.0	0.0	0.0	16.6	0.0	3.3	1.0	394083.4	3751470.3	24.08	Vertical

Table 5. Project VOLUME Source Parameters

Source Description	Model ID	Release Height		Init. Horizontal Dimension		Init. Vertical Dimension		UTM Coordinates (NAD83)		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	East (m)	North (m)	(m)
Onsite trucks - LPG	TRK_001-TRK_086	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		
Onsite trucks - Key Rack	TRK_087-TRK_154, TRK_208-TRK_220	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		
Onsite trucks - Feed Stock	TRK_180-TRK_207, TRK_236-TRK_247	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		
Onsite trucks - Pretreatment Unit	TRK_155-TRK_179, TRK_221-TRK_235	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		
H2 plant venting	H2VENT	10.0	3.05	6.9	2.1	9.3	2.83	393930.3	3751539.0	23.77

Figure 3. Modeled Source Locations



3.2.3 Terrain Characterization

AERMOD requires that each source in the analysis be categorized as being in either a rural or an urban setting. Consistent with SCAQMD guidance, all sources were designated as urban.

Although the area is relatively flat, source and receptors were modeled with consideration of terrain elevations. The AERMOD terrain processor (AERMAP) was used to calculate terrain elevations for each source and receptor from the U.S. Geological Survey (USGS) National Elevation Dataset (NED).

3.2.4 Building Downwash

When point sources are located near or on buildings or structures, the dispersion of the plume can be influenced. The wake produced on the lee side (i.e., downwind) of the structure can cause the plume to be pulled toward the ground near the structure resulting in higher concentrations. This is called building downwash. Stack heights that minimize downwash effects are designated good engineering practice (GEP) stack heights.

The effects of building downwash have been examined in this modeling analysis. AERMOD uses the U.S. EPA-approved Building Profile Input Program with Plume Rise Model Enhancements (BPIP-PRIME) to provide input for the downwash analysis. This program calculates the GEP formula stack heights and direction-specific building dimensions for input to the dispersion calculations. BPIP-PRIME requires the input of building coordinates and heights, and stack coordinates. The heaters and boilers are project stationary point sources. The building downwash effects for these stacks are based on structures in the vicinity that were judged to have downwash potential.

3.2.5 Meteorological Data

The AERMOD-ready meteorological data sets for years 2012-2016 for the Long Beach, CA monitoring station were used for the analysis. These data sets were developed by SCAQMD using AERMET version 16216, the AERMOD meteorological data preprocessor, and provided for use in this analysis. The Long Beach meteorological station appears to be the most representative station to the Paramount facility as it is in close proximity (approximately 6 miles south of the plant) and there are no intervening terrain features. A windrose showing a graphical distribution of wind speed and wind direction for the time period modeled is included as Figure A-1 of the Exhibits.

3.2.6 Receptors

The receptors used to analyze project impacts include:

- 100-meter spaced receptors outside the outer facility boundary
- 75-meter spaced receptors along the facility boundary

Receptor spacing was within SCAQMD modeling guidelines[2], which requires a fenceline spacing of 75 meters or less for facility areas between 25 and 100 acres (Paramount site is approximately 60 acres). Receptor heights above ground were set to 0.0 meters, consistent with SCAQMD modeling guidance. This network is composed of Cartesian (X,Y) receptors with Universal Transverse Mercator (UTM) coordinates. The modeling was conducted using the North American Datum of 1983 (NAD83).

Figure B-1 of the Exhibits shows a plot of the receptors. A total of 855 fenceline and grid receptors were included in the analysis, plus an additional 12 sensitive receptors (schools, hospitals, etc.), for a total of 867 receptors.

4.0 MODELING RESULTS

The modeling results for NO_2, SO_2, and CO are summarized in Table 6 along with the applicable AAQS. The results for PM_{10} and $PM_{2.5}$ are shown in Table 7, along with the SCAQMD's Significant Impact Levels.

The project's impact on attainment pollutants (NO_2, SO_2, and CO) is determined by adding the modeled increase to the representative background concentration and comparing the results to the AAQS (see Table 1). The maximum modeled value of the five years modeled was added to the maximum background concentration observed in the three-year period 2017 – 2019 and compared to the appropriate AAQS, with the following exceptions:

- The federal 1-hr NO_2 standard is the 3-year average of each year's 98th percentile daily maximum 1-hr average. Therefore, the background concentration for the federal 1-hr NO_2 standard is the 3-year average of each year's 98th percentile daily maximum 1-hr average. As a conservative "first pass", the maximum 1-hr average NO_2 concentration from the five years modeled was added to the background concentration for the federal 1-hr NO_2 standard. Since the total was below the standard, no further refinement was necessary.
- The federal SO_2 1-hr standard is the 3-year average of the annual 99th percentile daily maximum 1-hr average. As a conservative "first pass", the modeled maximum 1-hr average, rather than the 99th percentile values (a lower value than the maximum), was added to background (99th percentile, 3-year average) for comparison. Since the total was below the standard, no further refinement was necessary.

Regarding NO_2, the emission increases that were modeled are actually nitrogen oxides (i.e., a mixture of nitrogen oxide (NO) and NO_2. To conservatively assess the impacts, NOx was assumed to be 100 % NO_2.

As shown in Table 6, the maximum total concentrations (modeled impacts plus background) are less than the most stringent AAQS for NO_2, SO_2, and CO. Therefore, the modeled increases are not

[2] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

expected to create exceedances of AAQS. Notably, compliance with the state 1-hr SO_2 standard ensures compliance with the federal 3-hr SO_2 standard listed in Table 1 because the 1-hr values are lower than the 3-hr standard. Impacts associated with ambient NO_2, SO_2, and CO concentrations therefore are expected to be less than significant.

In the case of particulate matter impacts, the comparisons made in Table 7 demonstrate that modeled PM_{10} and $PM_{2.5}$ impacts are less than the Significant Impact Levels. The PM_{10} and $PM_{2.5}$ impacts therefore are also expected to be less than significant.

The receptors with maximum concentrations as calculated by the model for all pollutants and averaging periods are shown in Figure C-1. The AERMOD input and output electronic files are on file with the City of Paramount.

Table 6. Total Modeled NO_2, SO_2, and CO Concentrations Compared to AAQS

Pollutant	Averaging Period	Concentrations (µg/m³)			
		Modeled Impact[a]	Background[b]	Total	AAQS
NO_2	1 Hour - State	22.8	186.3	209.1	339
	1 Hour - Federal[c]	22.8	125.6	148.4	188
	Annual	5.1	30.3	35.3	57
SO_2	1 Hour - State	16.0	56.3	72.3	655
	1 Hour – Federal[d]	16.0	40.9	56.9	196
	24 Hour	16.0	9.2	25.1	105
CO	1 Hour	19.0	6,984.5	7,003.5	23,000
	8 Hour	14.7	5,267.0	5,281.7	10,000

[a] Maximum 1-hr, 8-hr, 24-hr, and annual average from all five years modeled conservatively used for all model impacts.

[b] Background values taken from SCAQMD Air Quality Data Tables for 2017-2019 (downloaded 8/19/2020) for Station #033 (West Long Beach) for NO_2 and Station #112 (Compton) for SO_2 and CO. Maximum value of the three years was used. See: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year. 2017-2019 24-hr SO_2 data not available on SCAQMD Air Quality Data Tables; those values obtained from https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.

[c] Federal standard is the 98th percentile concentration, averaged over three years.

[d] Federal standard is the 99th percentile concentration, averaged over three years.

Table 7. Modeled Particulate Matter Impacts

Pollutant	Averaging Period	Modeled Impact (µg/m3)	Significance Threshold [a] (µg/m3)
PM_{10}	24-hr	1.49	2.5
	Annual	0.41	1
$PM_{2.5}$	24-hr	1.43	2.5

[a] SCAQMD Significant Increase in Concentration per Rule 1303 Table A-2 and SCAQMD Air Quality Significance Thresholds (see http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf).

5.0 CONCLUSION

A detailed air dispersion modeling analysis of criteria pollutant impacts was performed using AERMOD. The results demonstrate that the potential increases in concentrations of NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ are less than the SCAQMD's respective CEQA significance thresholds. Therefore, the impacts of criteria pollutant emissions from the Renewable Fuels Project are expected to be less than significant.

EXHIBIT A. WINDROSE

Figure A-1. Windrose

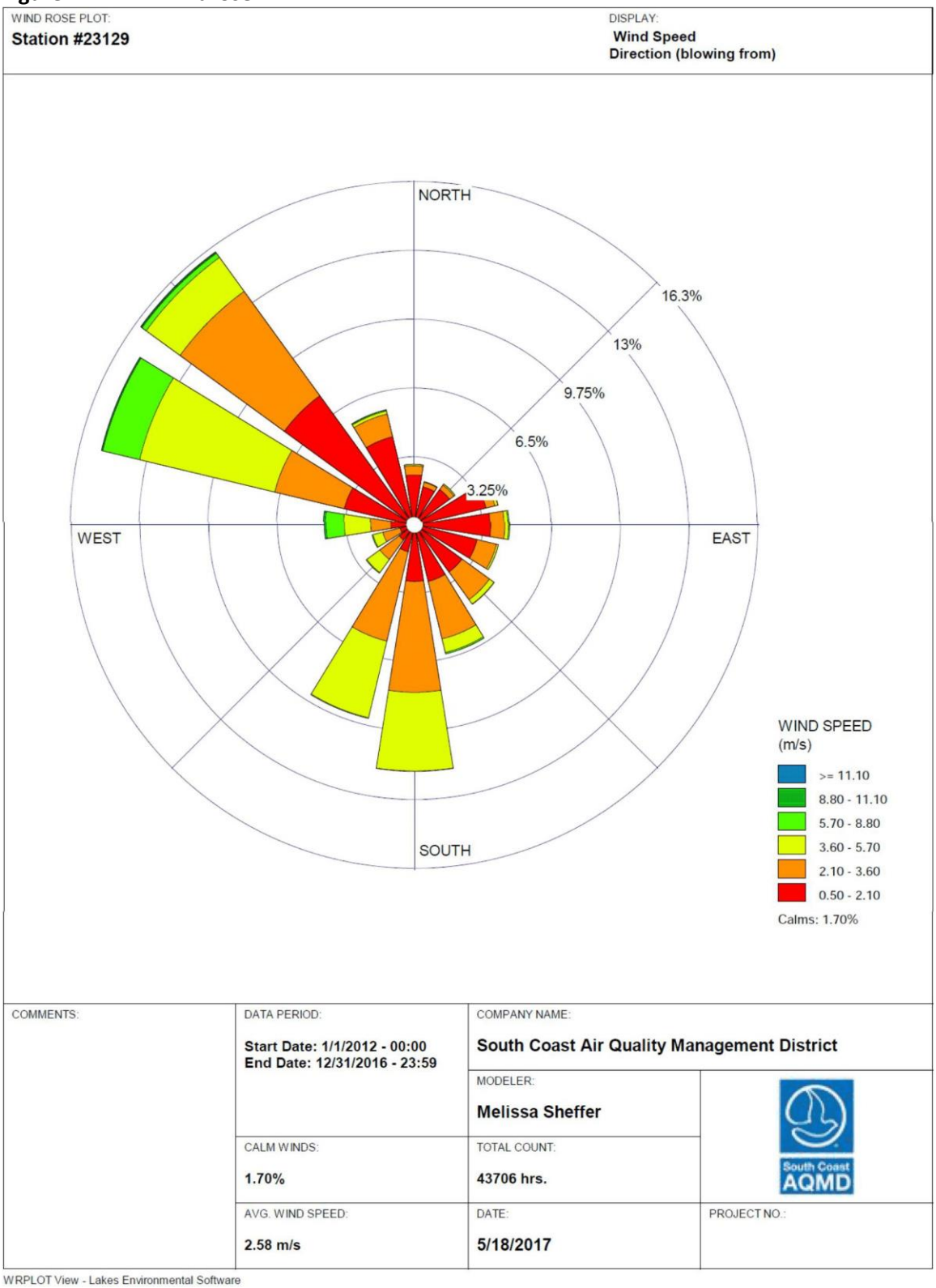


EXHIBIT B. RECEPTOR GRID DIAGRAM

Figure B-1. All Receptor Locations

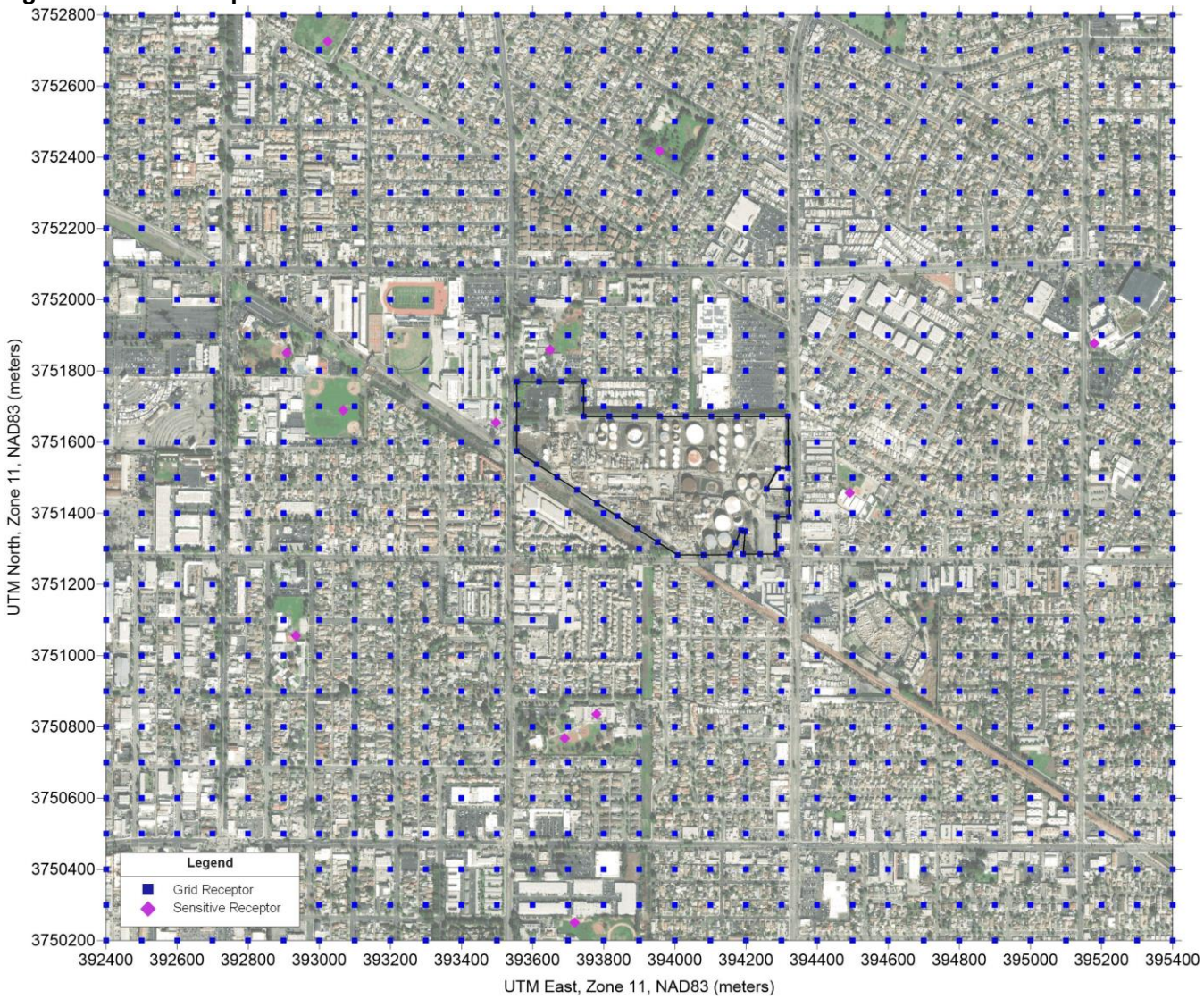


EXHIBIT C. LOCATION OF MAXIMUM IMPACTED RECEPTORS

Figure C-1. Location of Maximum Impacted Receptors

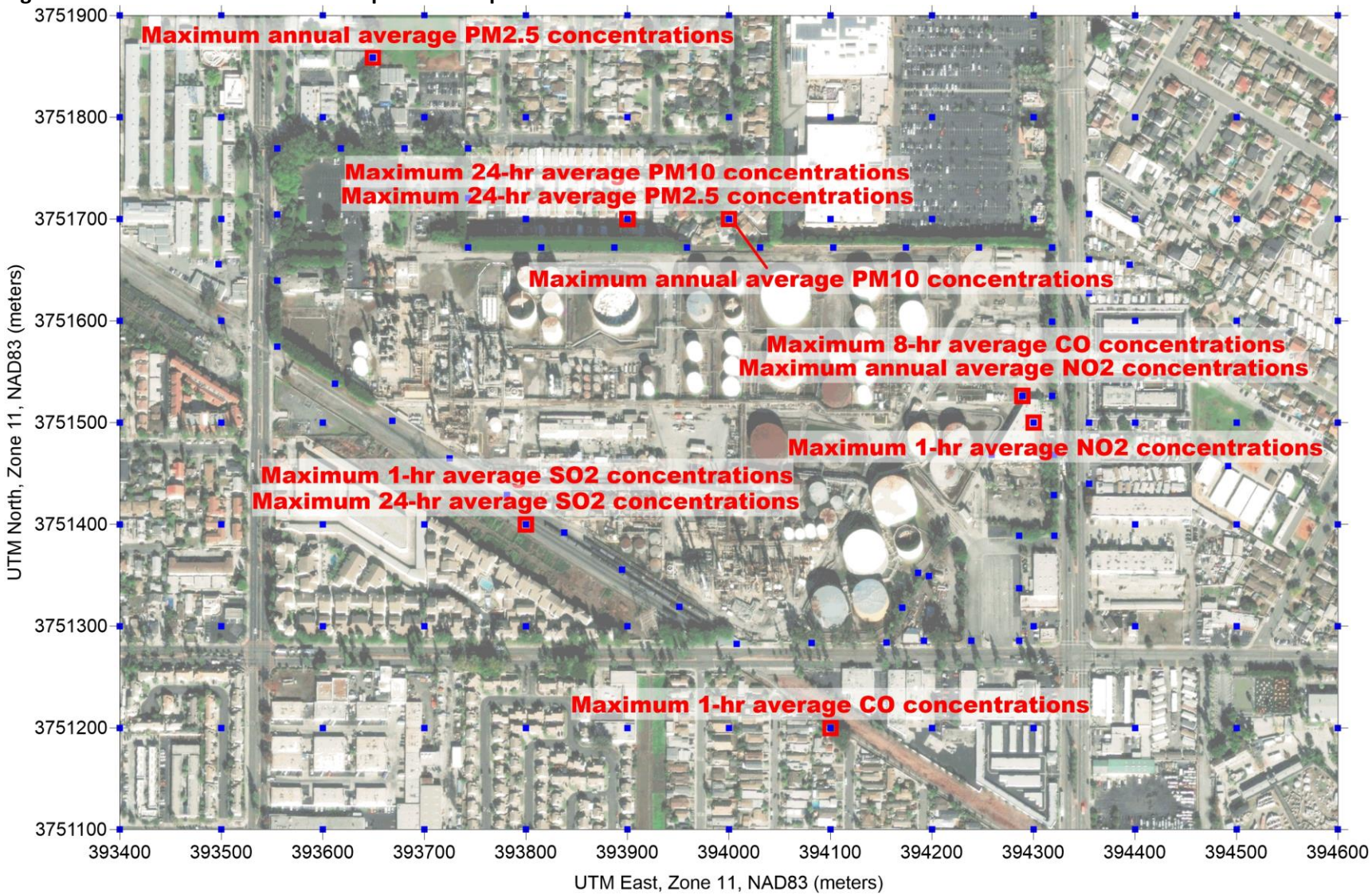


EXHIBIT D. ELECTRONIC FILES

Electronic files on file with City of Paramount.

ATTACHMENT D. REFINERY HEALTH RISK ASSESSMENT (HRA)

Paramount Petroleum AltAir Paramount Renewable Fuels Project SCAQMD Facility ID 187165

Health Risk Assessment

Prepared by:

Ashworth Leininger Group
601 East Daily Drive, Suite 302
Camarillo, California 93010
(805) 764-6010

In coordination with

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
(714) 632-8521

Prepared February 2022

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1.0 EXECUTIVE SUMMARY

Paramount Petroleum AltAir Paramount (Paramount), a wholly owned subsidiary of World Energy, proposes to complete the conversion of the Paramount Refinery to a Renewable Fuels Facility. In 2013, portions of the refinery were converted from processing crude oil and other petroleum products to renewable diesel, jet fuel, and naphtha production from renewable feedstocks like vegetable oils and tallow. The project will convert the remainder of the Paramount Refinery into a renewable fuels production facility, eliminating the refining of crude oil. A health risk assessment (HRA) was conducted to support the Subsequent Environmental Impact Report prepared by the City of Paramount for this project. The purpose of the analysis is to evaluate the risk associated with toxic emissions from all sources of the project in order to determine if it has the potential to increase greater than CEQA significance thresholds. The analysis determined that cancer, chronic, and acute risks are expected to be below significance levels. The HRA was prepared in coordination with Environmental Audit, Inc.

1.1 Facility Information

AltAir Paramount, LLC operates a refinery in the city of Paramount. Figures 1 and 2, below, show the facility location. The complete address is as follows:

Paramount Petroleum AltAir Paramount
14700 Downey Avenue
Paramount, CA 90723
SCAQMD Facility ID #187165

Figure 1. General Location Map

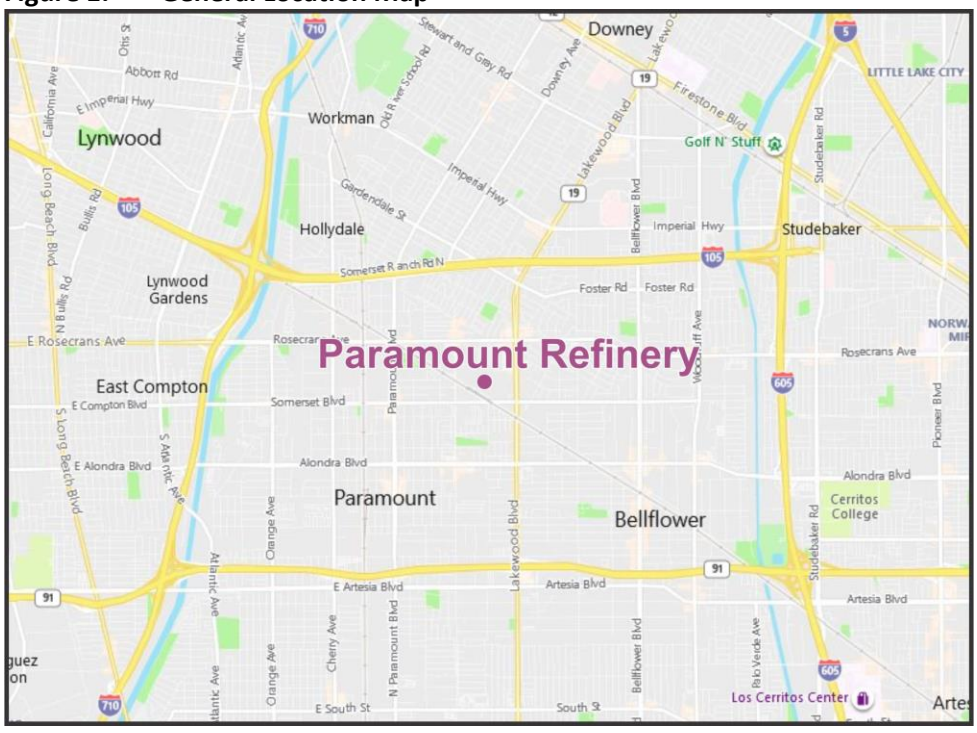
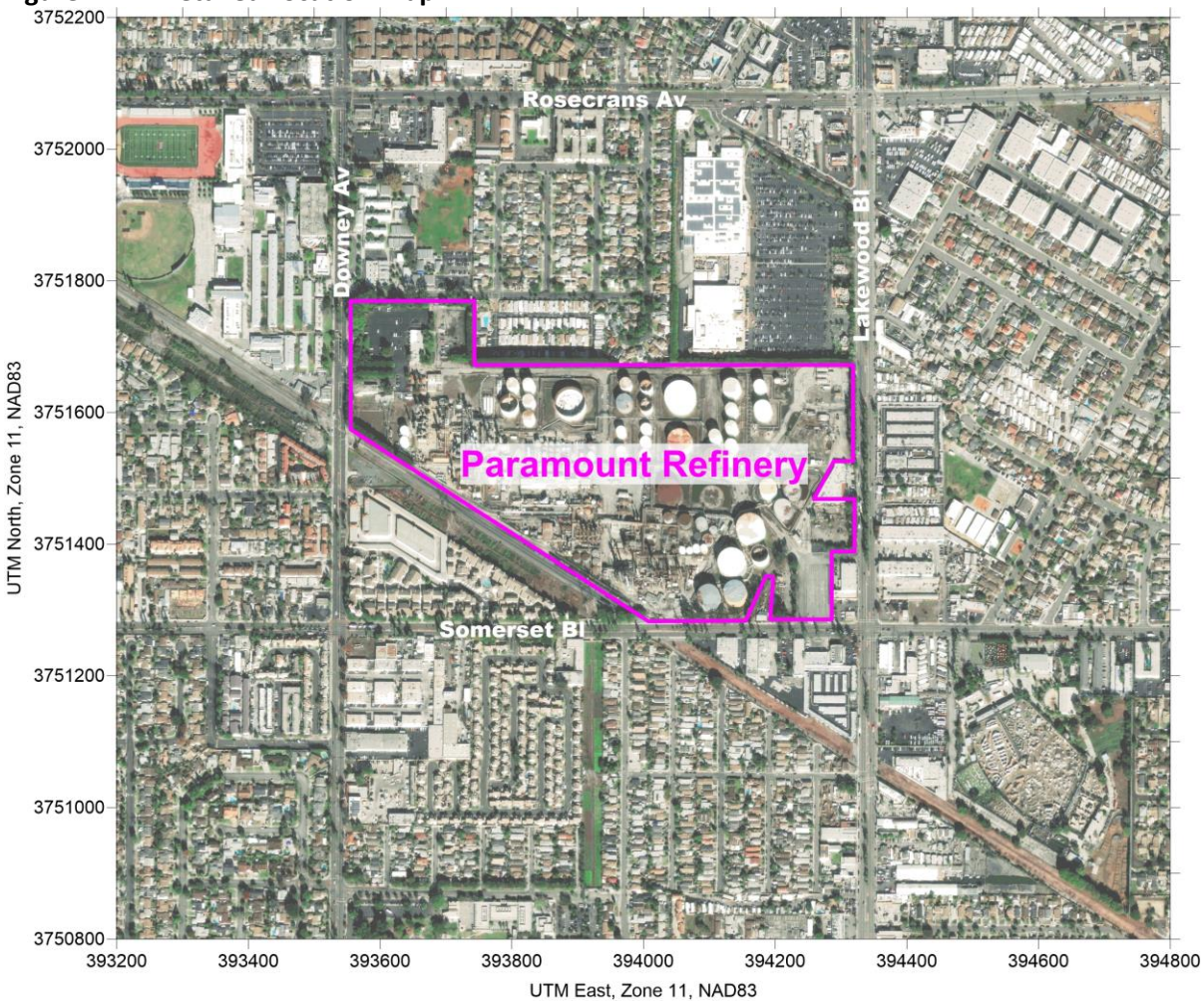


Figure 2. Detailed Location Map



The project also includes modifications to operations at the Lakewood Tank Farm. The Lakewood Tank Farm is located at 2920 E. South Street, Lakewood, California, about 3 miles south of the Paramount facility. The potential impact of toxic chemical emissions from the Lakewood Tank Farm modifications is addressed in a separate HRA[1].

1.2 Substances Emitted

Emission sources at the Paramount facility that will be modified as part of the conversion to a renewable fuels facility include storage tanks, truck and rail load racks, fugitive emissions from piping components, heaters, boilers, wastewater treatment, a hydrogen plant, and other process

[1] The distance between the Paramount facility and the tank farm is such that the two modeling domains do not overlap. Any impact from emissions at the tank farm to the Paramount facility would be infinitesimal, and vice-versa.

units. Substances emitted, and their respective annual and maximum hourly emissions are shown in Exhibit A and Exhibit C.

1.3 Pathways and Target Organs

All substances potentially emitted were evaluated for risk based on inhalation exposure. Additionally, exposure to certain chemicals can affect health via multiple pathways; those pollutants and the specific pathways are shown in Table 1, below.

Table 1. Pathway and Target Organ Systems by Pollutant

Substance	CAS #	Inhalation	Soil Ingestion	Dermal	Homegrown Produce	Mother's Milk
7,12-Dimethylbenz[a]anthracene	57-97-6	X	X	X	X	X
3-Methylcholanthrene	56-49-5	X	X	X	X	X
Benzo[a]pyrene	50-32-8	X	X	X	X	X
Dibenz[a,h]anthracene	53-70-3	X	X	X	X	X
Indeno[1,2,3-cd]pyrene	193-39-5	X	X	X	X	X
Benz[a]anthracene	56-55-3	X	X	X	X	X
Benzo[b]fluoranthene	205-99-2	X	X	X	X	X
Benzo[k]fluoranthene	207-08-9	X	X	X	X	X
Chrysene	218-01-9	X	X	X	X	X
PAHs	1151	X	X	X	X	X
Chromium (VI)	18540-29-9	X	X	X	X	X
Cadmium	7440-43-9	X	X	X	X	
Nickel	7440-02-0	X	X	X	X	

1.4 Dispersion Modeling and Exposure Assessment

This health risk assessment was performed following the SCAQMD and Office of Environmental Health Hazard Assessment (OEHHA) guidelines[2]. As recommended by these guidelines, the California Air Resources Board (CARB) Hotspots Analysis and Reporting Program (HARP, v 21081) was used to perform a refined health risk assessment for the project's emission sources. The AERMOD (v. 21112) air dispersion model was used for this analysis. HARP includes AERMOD but also allows model runs to be performed with AERMOD outside of HARP. For this project, AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis.

Source locations, dimensions, and operating parameters were entered into AERMOD to estimate normalized ground level concentrations from each source based on an emission rate of one gram

[2] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 6

California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015.

per second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal, etc.) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance. For this analysis, the dermal absorption, soil ingestion, mother's milk, and home grown produce ingestion pathways, along with inhalation, were considered to be viable exposure pathways for the area of impact.

1.5 Dose-Response Assessment

As described in the OEHHA risk assessment guidelines, the dose-response assessment describes the quantitative relationship between the amount of exposure of a person to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). For carcinogens, this information is quantified as a cancer potency slope. For non-carcinogens, dose-response information is characterized as a reference exposure level (REL).

1.5.1 Carcinogens

OEHHA has developed cancer potency factors for inhalation and non-inhalation pathways. The cancer potency factors represent an upper bound probability of developing cancer based on a continuous lifetime exposure to one milligram per kilogram of body weight of a substance. The cancer potency factor does not represent a threshold under which a person would not develop cancer but instead is used to estimate the probability of developing cancer. OEHHA regularly updates cancer potency factors as new information becomes available. This assessment is based on the latest health tables made available by OEHHA[3].

1.5.2 Non-Carcinogens

OEHHA has developed RELs for acute and chronic non-carcinogenic impacts. Unlike cancer potency factors, these RELs represent concentration thresholds at which no adverse non-cancer health effects are anticipated. Since a substance may affect multiple organs or endpoints, each substance may have multiple RELs to represent each toxicological endpoint. However, the REL for the most sensitive endpoint is used to ensure the REL considers the most adverse potential impacts. The chronic RELs are based on continuous exposure over a significant fraction of a lifetime. The acute RELs are typically based on a 1-hour exposure. Chronic RELs have been developed for inhalation and non-inhalation pathways while acute RELs have been developed only for the inhalation pathway. OEHHA regularly updates the RELs and this health risk assessment is based on the latest HARP health tables made available by OEHHA.

[3] The health database used in the HRA was last updated October 2, 2020.

1.6 Adjustment of Pre-Project Emissions

For the purposes of determining the project health risk impacts, the post-project health risks are compared to the activities that were occurring prior to the initiation of the Renewable Fuel Project, which was evaluated in 2013. The activity level in 2011 was used in the 2013 Negative Declaration and, as a Subsequent EIR, remains the basis for the comparison of the current project. However, a few adjustments deemed necessary were made:

- Since 2011 to the post-project operating year of 2024, emission factors for mobile emissions, specifically, on-road trucks emission factors, have improved due to the continuous turnover in the truck fleet. The turnover in truck fleet improves emission factors because every year a certain fraction of the older, lower engine tier trucks is replaced by newer, cleaner running trucks. This continuous turnover in truck fleet would occur with or without the project, therefore, the emission factors for trucks actually operating in 2011 were updated to post-project operating year emission factors. Updating the on-road mobile emission factors allows the HRA to analyze the change in health risk independently from any changes outside of the scope of the project. That is to say, updating the emission factors removes any benefits the project would have shown due to regulatory action, which is not part of the actual project.
- The U.S. EPA AP-42 emission calculation methodology for organic liquid storage tanks (AP-42 7.1) was updated in 2020. The previous organic liquid storage tanks emissions were calculated using the 1999 U.S. EPA TANKS 4.09D model, which has since been deemed out of date. Therefore, 2011 storage tank emissions were re-calculated using the 2020 AP-42 storage tank emission factors.
- The pre-project toxic speciation profiles for petroleum products were based on default profiles from the EPA TANKS software. These profiles are outdated and were updated to match the post-project toxic speciation profiles, which are taken from American Petroleum Institute (API) Publication 4723-A, *Refinery Stream Composition Data – Update to Speciation Data in API 4723* (Dec. 2018).

Updating the on-road mobile emission factors, organic liquid storage tank emission calculations, and speciation profiles allows the HRA to analyze the change in health risk independently from any changes outside of the scope of the project. That is to say, updating the emission factors and methodologies removes any benefits the project would have shown due to regulatory action, which is not part of the actual project. Therefore, this analysis will only compare the post-project health impacts to the updated 2011 emissions pre-project health impacts. A comparison of pre-project health risk from the reported 2011 emissions to the updated pre-project emissions is summarized in Table 2 below.

Table 2. Comparison of Pre-Project Risk

Location	Risk Value (Reported 2011 Emissions)	Risk Value (Updated 2011 Emissions)[4]
Cancer Risk (Per Million)		
Maximum exposed individual resident (MEIR)	5.12E-05	4.94E-05
Maximum exposed individual worker (MEIW)[5]	1.99E-05	1.97E-05
Highest sensitive receptor	9.29E-06	8.34E-06
Chronic Hazard Index		
Maximum exposed individual	6.17E-02	6.23E-02
Acute Hazard Index		
Maximum exposed individual	1.01E-01	1.01E-01

1.7 Post-Project Emissions

Post-project emissions were based on SCAQMD and U.S. EPA approved calculation methodologies. With the exception of a few minor emission sources, all post-project emissions were conservatively calculated based on each individual source's potential to emit; therefore, modeled post-project emissions were significantly higher than anticipated actual emissions.

1.8 Summary of Results

The predicted health risks at maximally exposed offsite receptors are summarized by category in Table 3, below. The risk values shown are the difference between the risk calculated for the post-project potential emissions and the risk calculated for the updated 2011 pre-project emissions[6] except for acute risk, for which only post-project emissions were considered.

[4] Updated truck emission factors and emission rates and updated storage tank speciation and emission calculation methodology.

[5] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

[6] Risk values were calculated by subtracting pre-project risk from post-project risk. Updated pre-project risk was based on calendar year 2011 activity levels as reported in the SCAQMD Annual Emissions Report (AER). The updated pre-project emission calculations were based on methodologies used in the SCAQMD AER with some adjustments. First, storage tank seal and roof fittings were corrected as necessary as the 2011 AER used U.S. EPA TANKS program roof fitting defaults for many tanks rather than the actual fittings. Second, product toxic chemical speciations were updated for the 2011 AER sources to reflect the most accurate speciation profile values (no actual change in speciation between 2011 and present is expected). Finally, as described in Section 1.6, truck traffic emissions were based on the same emission factors as was used in the post-project emission calculations so as to not take credit for the cleaner fleet expected in 2021 and beyond.

Table 3. Summary of Results (Increase in Health Risk)

Location	Risk/HI Value			Receptor Number	UTM Coordinates (NAD83)	
	Pre-Project	Post-Project	Net		Easting (m)	Northing (m)
Cancer Risk (Per Million)						
Maximum exposed individual resident (MEIR)	3.8	10.6	6.8	17	394355	3751500
Maximum exposed individual worker (MEIW)[7]	0.45	1.77	1.32	849	394258.7	3751469
Highest sensitive receptor	2.9	5.7	2.8	3	394491.8	3751457
Chronic Hazard Index						
Maximum exposed individual	0.013	0.176	0.163	769	393900	3751300
Acute Hazard Index						
Maximum exposed individual	0	0.93	0.93	866	393838	3751392

A complete listing of the pre-project, post-project, and net cancer, chronic, and acute risk values at all modeled receptors can be found in Exhibit K.

1.8.1 Cancer Risk

The highest cancer risk increase at a residential receptor (#17) was a cancer risk value of 6.8 in one million. The receptor was located east of the facility at a mobile home park across Lakewood Boulevard. The receptor with the highest calculated worker cancer risk increase was a fenceline receptor (#849) on the eastern side of the facility where an auto body shop and auto parts store share a boundary with the facility. The worst-case worker cancer risk increase at this receptor was 1.3 per million.

The highest calculated cancer risk increase at a sensitive receptor was 2.8 per million, at Albert Baxter Elementary School (receptor #3) located about 150 meters east of the facility. Table 10 provides the cancer risk at all sensitive receptors.

Cancer risk increases at each of these receptors were primarily due to potential fugitive emissions of benzene and naphthalene from piping components and storage tanks and, to a lesser extent, diesel particulate matter (DPM) emissions from onsite truck traffic and the Union Pacific rail mover.

Table G-1, Table G-2, Table H-1, and Table H-2 of the Exhibits show the cancer risk by substance and by emission source. A map showing the location of the MEIR, and MEIW is included as Figure I-1 of the Exhibits. Contour maps showing the 30-year (yr) residential cancer risk, the 25-yr worker cancer risk, and the 70-yr cancer burden are included as Figure J-1, Figure J-2 and Figure J-3 of the Exhibits.

[7] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

1.8.2 Chronic Risk

The increase in chronic hazard index was below one at all receptors. The chronic risk increase at the maximum exposed individual receptor was a hazard index of 0.163, at receptor #769 located just south of the facility.

The substances contributing most to chronic risk increases at this receptor are hydrogen sulfide and sulfuric acid associated with piping components at various process units as well as the heaters and boilers. The associated target organ/system was the respiratory system. Table G-3**,** Table G-4, Table H-3, and Table H-4 of the Exhibits show the chronic risk by substance and by emission source. As the maximum chronic risk was below 0.5 at all receptors, no contour map was generated.

1.8.3 Acute Risk

Acute risk was considered only for the post-project emissions (pre-project risk was not subtracted from post-project risk). This is because acute risk a short-term risk based on one-hour exposure. It is not a cumulative risk like cancer or chronic, therefore, previous exposures do not affect current exposures. Additionally, the acute hazard index increase at each receptor was calculated based on the conservative assumption that all emission sources were emitting at their respective maximum rates simultaneously, 24 hours per day and 365 days per year. The increase in acute hazard index at the maximum exposed individual was 0.93, at fenceline receptor #866 located on the southern boundary of the facility.

The primary source of the acute risk increase was from hydrogen sulfide associated with piping components in various process units, with the Unit B H_2S Recovery Unit being the largest contributor. Hydrogen sulfide contributes over 99% of the acute risk for the central nervous system target organ/system.

Table G-5, Table G-6, Table H-5, and Table H-6 of the Exhibits show the acute risk by substance and by emission source.

1.8.4 Population Exposure

To determine population exposure, dispersion modeling was performed at receptors located at the centroid of all census tracts whose centroid could potentially equal or exceed a residential cancer risk of one per million, based on a 70-yr exposure. 70-yr residential cancer risk was calculated at each of these receptors. For any receptor with a cancer risk greater than one per million, the population of the census tract represented by that receptor was summed to determine the total exposure to various levels of cancer risk. The results of these calculations are provided in Table 4, below.

Table 4. Population Exposure

Cancer Risk	Population	
	Pre-Project 70-yr exposure	Post-Project 70-yr exposure
1 to <10 in a million	37,584	13,556
10 to <25 in a million	1,643	784
25 to <100 in a million	14	0
100 to <1000 in a million	0	0
>=1000 in a million	0	0
Total >= 1 in a million	**39,241**	**14,340**

Additionally, cancer burden was calculated based on the total population exposed to 70-yr cancer risk above one per million. The population of each census tract was multiplied by the 70-yr cancer risk calculated at the representative receptor. These products were summed, and the cancer burden was determined to be 0.099 for the pre-project case and 0.041 for the post-project case. Therefore, there is a net reduction in cancer burden as a result of this project.

2.0 HAZARD IDENTIFICATION

Paramount operations emit the following types of compounds:

Storage Tanks: Volatile organic compounds (VOCs), hydrogen sulfide (H_2S)

Truck and Rail Loading Racks: VOCs, H_2S

Pipeline Component and Process Unit Fugitive Emissions: VOCs, H_2S, hydrogen chloride, ammonia

Combustion Sources (heaters, boilers, cogeneration unit, flare): VOCs, ammonia, PAHs, metals

Hydrogen Plant: Ammonia, methanol

Wastewater Treatment: VOCs, H_2S

Cooling Towers: VOCs, H_2S, ammonia, HCl

Onsite Truck Traffic: DPM

Offsite Railcar Mover (adjacent to facility): DPM

A complete list of substances emitted is provided in Table A-1 and Table A-2 of the Exhibits.

Emissions of these substances were evaluated for cancer risks, as well as non-cancer acute and chronic health impacts. Some of these substances present a potential cancer risk or chronic non-cancer hazard via non-inhalation pathways; those substances are listed in Table 5, below.

Table 5. Pathway by Pollutant

Substance	CAS #	Inhalation	Soil Ingestion	Dermal	Homegrown Produce	Mother's Milk
7,12-Dimethylbenz[a]anthracene	57-97-6	X	X	X	X	X
3-Methylcholanthrene	56-49-5	X	X	X	X	X
Benzo[a]pyrene	50-32-8	X	X	X	X	X
Dibenz[a,h]anthracene	53-70-3	X	X	X	X	X
Indeno[1,2,3-cd]pyrene	193-39-5	X	X	X	X	X
Benzo[a]anthracene	56-55-3	X	X	X	X	X
Benzo[b]fluoranthene	205-99-2	X	X	X	X	X
Benzo[k]fluoranthene	207-08-9	X	X	X	X	X
Chrysene	218-01-9	X	X	X	X	X

Annual and maximum hourly emission rates are provided in Exhibit D.

3.0 EXPOSURE ASSESSMENT

The exposure assessment includes air dispersion modeling, identification of exposure routes, and estimation of exposure levels. In a typical exposure assessment, the air dispersion modeling is used to estimate normalized ground level concentrations based on an emission rate of one gram per second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance.

3.1 Facility Description

AltAir Paramount, LLC (SCAQMD Facility ID #187165), proposes to complete the conversion of the Paramount Refinery to a Renewable Fuels Facility. In 2013, portions of the refinery were converted from processing crude oil and other petroleum products to renewable diesel, jet fuel, and naphtha production from renewable feedstocks like vegetable oils and tallow while continuing to refine crude oil in other processing units. The project will convert the remainder of the Paramount refinery into a renewable fuels production facility, eliminating the refining of crude oil. The facility address is:

Altair Paramount, LLC
Paramount Petroleum Corporation
14700 Downey Avenue
Paramount, CA 90723

The facility is located in a mixed commercial, industrial, and residential urban area with residential neighborhoods or mobile home parks on all sides of the facility. A high school and an elementary school are located adjacent to the northwest corner of the facility. The terrain surrounding the facility is relatively flat, with a gentle slope from north to south and no significant terrain features within about five miles of the facility boundaries.

Figure 3 and Figure 4 below shows the facility boundaries as well as emission source locations. Figure 5 and Figure 6 show the location of downwash structures considered in the modeling.

A description of site/route dependent exposure pathways is included in Section 4.0 below.

Figure 3. Emission Source Location Diagram – Pre-Project Modeling

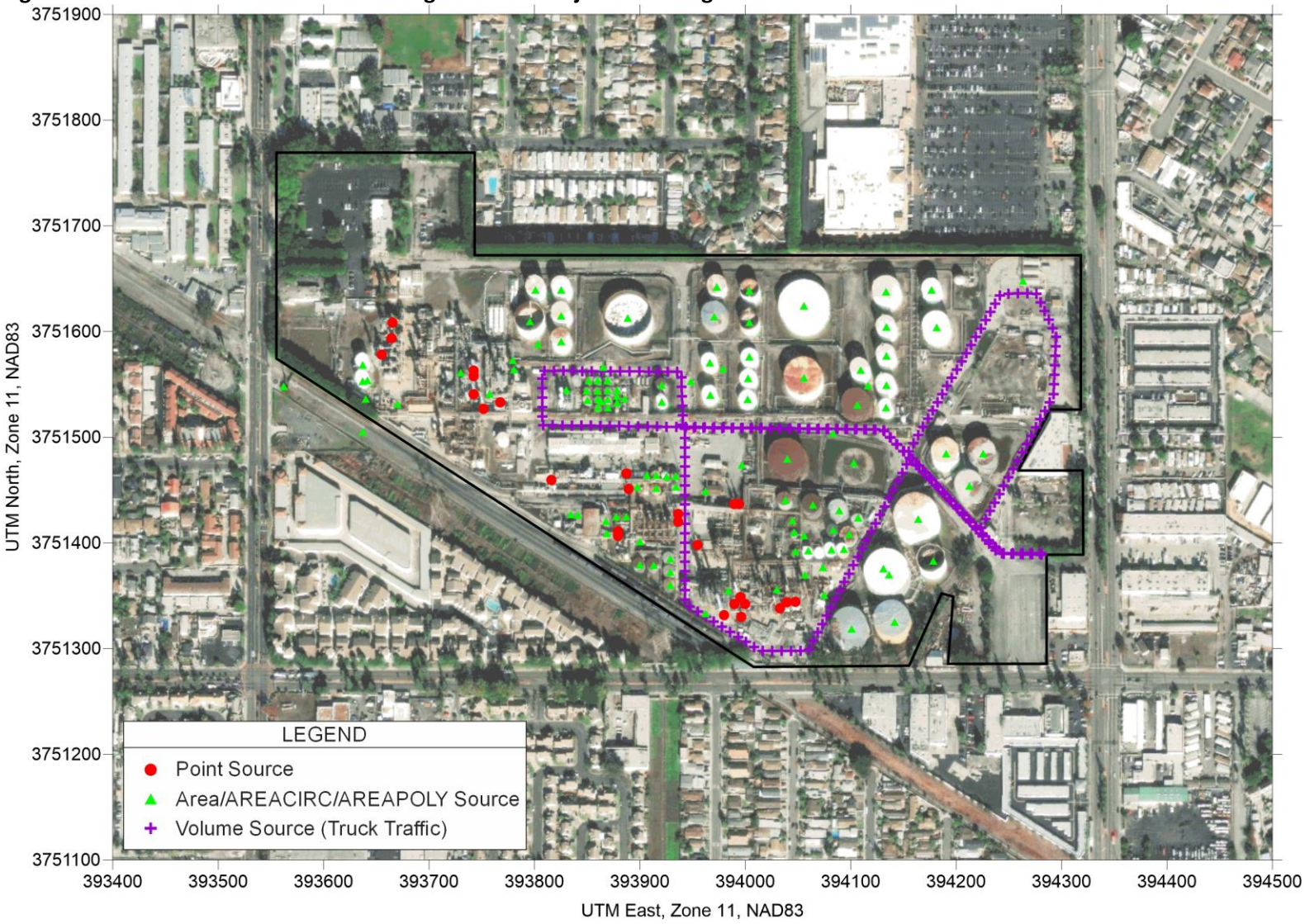


Figure 4. Emission Source Location Diagram – Post-Project Modeling

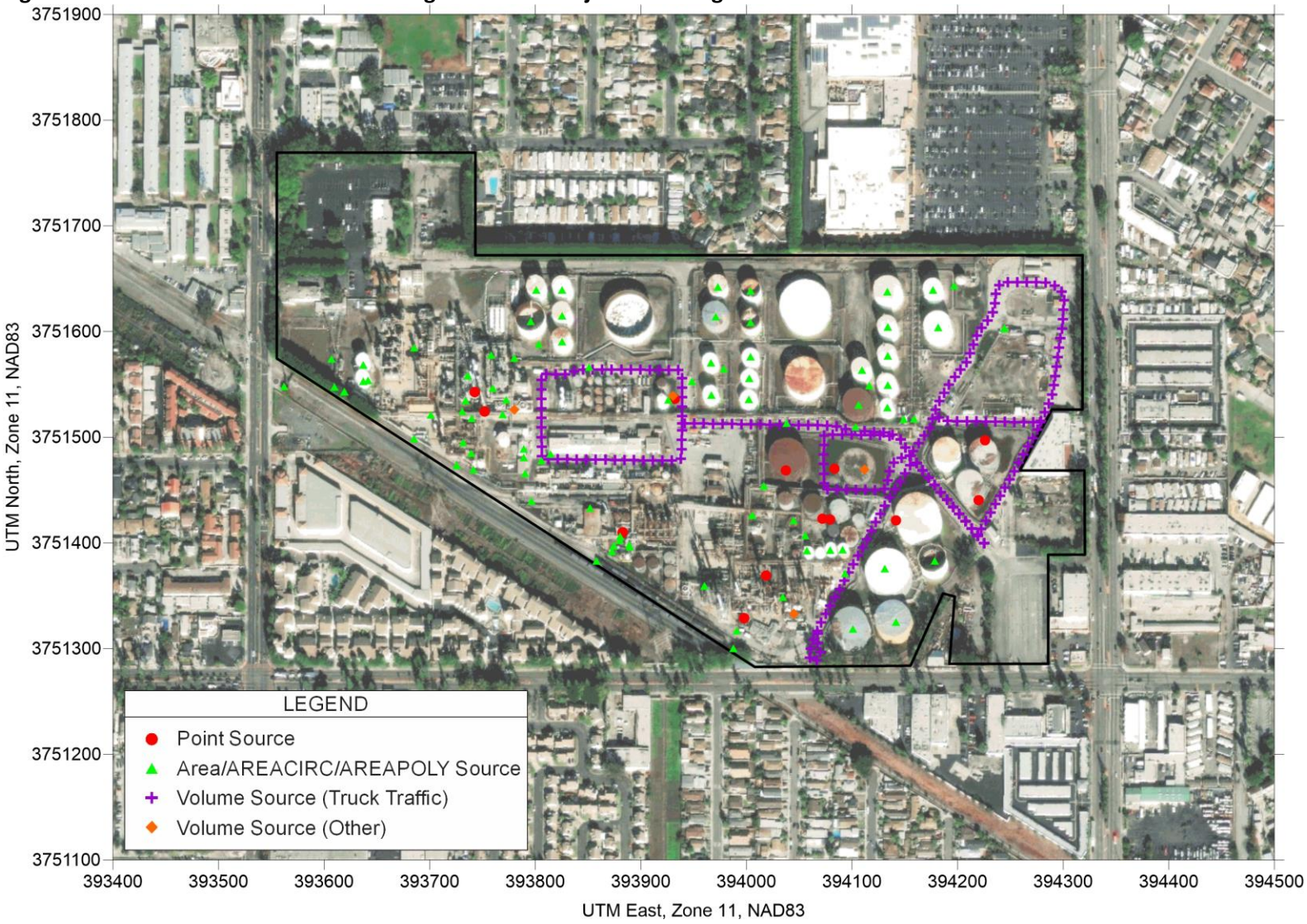


Figure 5. Downwash Structures Diagram (Pre-Project Modeling)

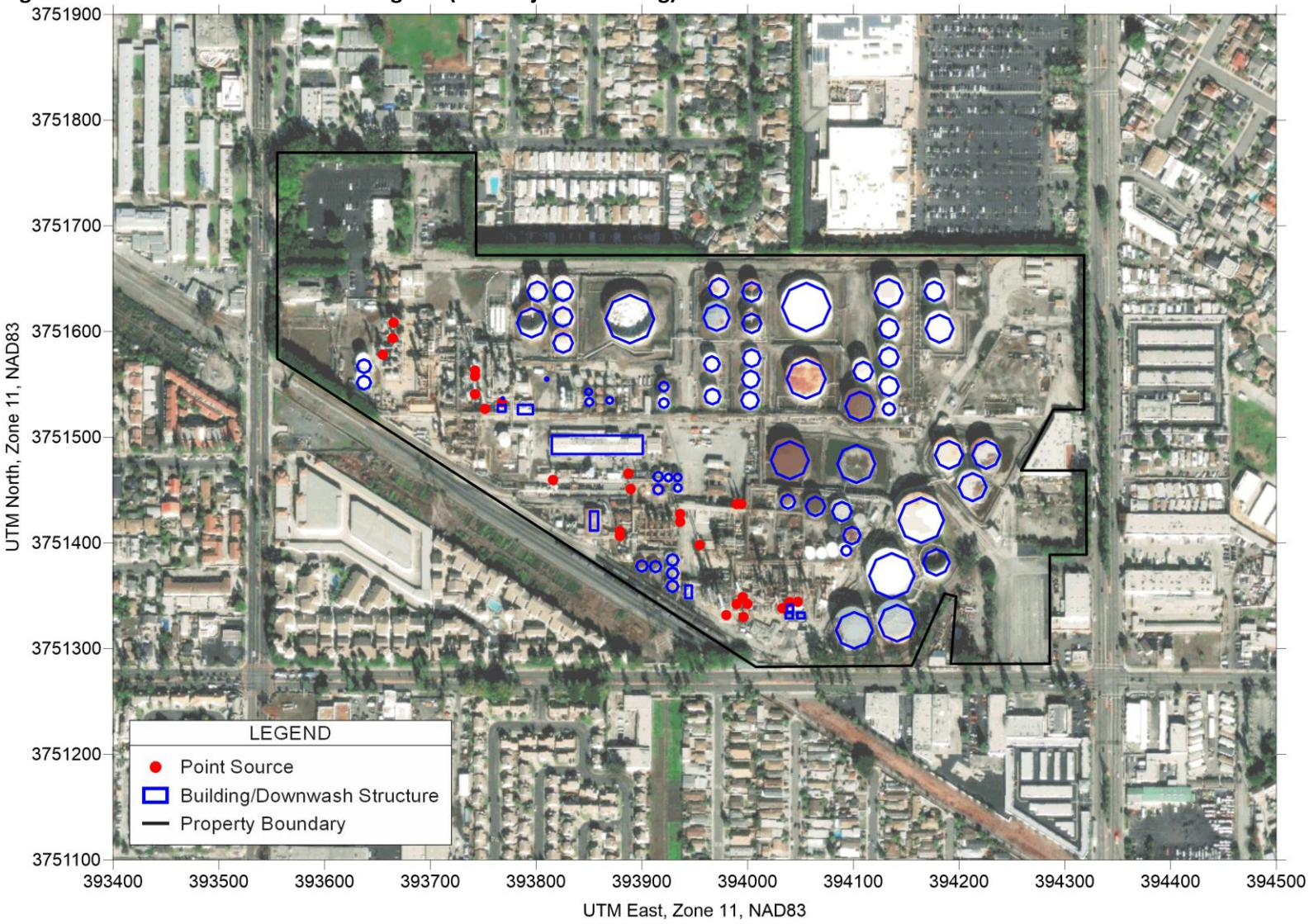
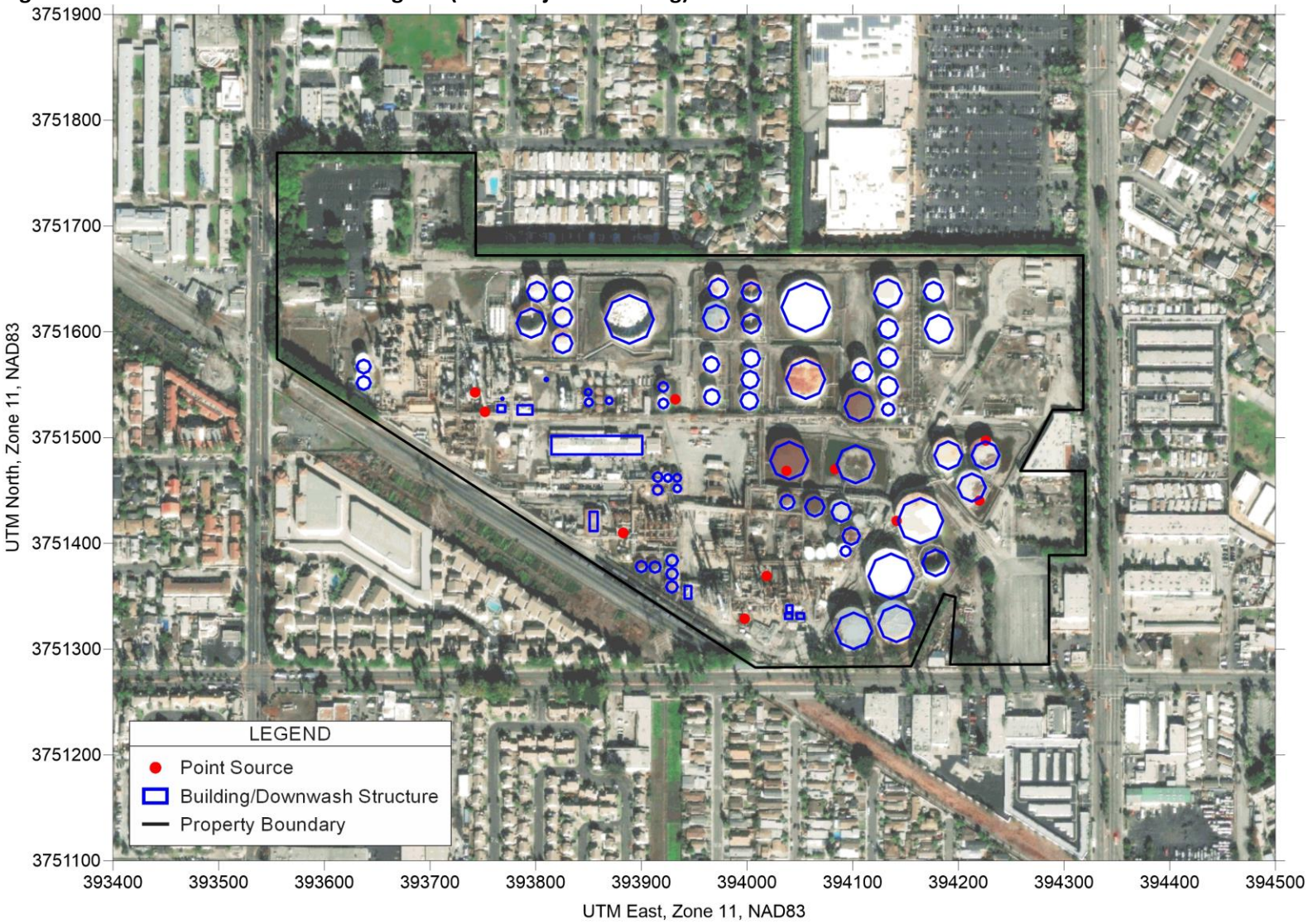


Figure 6. Downwash Structures Diagram (Post-Project Modeling)



3.2 Emissions Inventory

The following operations at Paramount are considered in this project:

- Storage Tanks
- Truck and Rail Loading Racks
- Pipeline Component and Process Unit Fugitive Emissions
- Combustion Sources (heaters, boilers, cogeneration unit, flare)
- Sour Water Stripper
- Hydrogen Plant
- Wastewater Treatment
- Onsite Truck Traffic
- Offsite Railcar Mover (adjacent to facility)

Figure 3 and Figure 4, above, show the location of the emission sources modeled. A description of the sources modeled and emission calculation methodology is provided in Table 6 and Table 7, below.

Table 6. Source ID and Description – Pre-Project Emission Sources

Source	Source ID	Description
Combustion Sources	B7, B8, B9, COGEN, H101, H102, H301, H302, H3036, H402, H501, H601, H602, H701, H702, H703, H704, H705, H801, H802, H805, H860, H901, H902, H905, H907	Combustion sources were modeled as point sources with stack parameters appropriate for each source. The Cogen was modeled as a combined stack for the turbine and the duct burner. Heaters 303, 304, 305, and 306 were modeled as a combined stack.
Diesel Combustion Sources	ZMLOOP, ZNLOOP, ZSLOOP, ZRAIL, UPRAIL	The HHD Truck emissions were modeled as three volume line sources that follow the three typical truck routes within the refinery. The onsite and offsite rail movers were modeled as area sources.
Storage Tanks Fugitives and Pipe Fugitives	T100001, T100002, T10001, T10003, T10004, T10005, T10006, T10007, T10008, T10009, T1012, T1013, T1014, T1015, T1019, T1020, T1021, T1022, T1023, T1024, T1025, T1026, T1027, T1028, T12500, T125002, T12501, T12502, T141, T142, 150001, T150002, T20001, T20002, T20003, T20004, T20005, T2014, T203, T2044, T2046, T2047, T2048, T2049, 25001, T25002, T25003, T25004, T25005, T25006, T25007, T25008,	Storage tanks were modeled as AREACIRC sources using the actual radius and height of each tank. Tank pipe fugitives were modeled as nine area sources and the emissions for all pipe fugitives were divided evenly amongst the nine area sources.

Source	Source ID	Description
	T25009, T2501, T3001, T35001, T3501, T50001, T50002, T50003, T50004, T50005, T50006, T50007, T50008, T5001, T5002, T5003, T5004, T5005, T5006, T5007, T509, T512, T513, T514, T5501, T6001, T6002, T776, T777, T80001, T80002, T80003, FUGTKFM0, FUGTKFM2, FUGTKFM3, FUGTKFM4, FUGTKFM5, FUGTKFM7, FUGTKFM8, FUGTKFM9	
Process Unit Fugitive Emissions	BENSAT, FUGASPH, FUGCRU1, FUGCRU2, FUGHDS, FUGJET, GASBLEN, LSR, NAPSPL, NAPSTR	Fugitive emissions from process units were divided into area sources.
Truck and Rail Loading Rack Fugitives	LGPRACK, LR192021, LR161718, LR34523, LR1214, LR111315, LR67812, LRRR	Fugitive emissions from truck and rail loading racks divided into seven truck loading area sources and one rail loading area source.
Wastewater Treatment	WWTS	The wastewater treatment system was modeled as an area source.

Table 7. Source ID and Description – Post-Project Emission Sources

Source	Source ID	Description
Storage Tanks	T100001, T100002, T10001, T10005, T10006, T10007, T10008, T10009, T1012, T1013, T12501, T12502, T20003, T20004, T20005, T2014, T242, T25001, T25002, T25003, T25004, T25005, T25006, T25007, T25008, T25009, T3001, T50001, T50002, T50003, T50004, T50008, T518, T6001, T6002, T35001, T1000, T150001, T20001, T20002, T50005, T50006	Storage tanks not venting to a control device were modeled as AREACIRC sources using the actual radius and height of each tank. Storage tanks venting to carbon canisters were modeled as point sources located adjacent to the tank with exhaust parameters of a typical carbon canister (height = 3 ft, diameter = 2 inches, negligible velocity, ambient temperature). Tank 1000 (T1000) vents to incinerator H-402 and was modeled with the stack parameters for that incinerator. Tanks 20001, 20002, 50005, 50006, and 150001 (T20001, T20002, T50005, T50006, T150001) vent to carbon canisters.

Source	Source ID	Description
Truck Loading Racks	R18_ST, R19_ST, R20_ST, R21_ST, R6061_ST, R7071_ST, R8081_ST, SP_CAUST	Eight truck loading racks will have the potential to emit toxic chemicals post-project. Loading vapors will be captured and vented to the H-907 incinerator for emissions control. The spent caustic loading rack will vent to the H-402 incinerator for emissions control. Vapors that passed through uncombusted were modeled as point sources (source IDs R18_ST, R19_ST, R20_ST, R21_ST, R6061_ST, R7071_ST, R8081_ST, SP_CAUST) and combustion products were modeled using identical source location and parameters of the stacks to which they will vent (source IDs H401_402, H907_908). Stack parameters were provided by the facility.
Rail Loading Racks	SP3_ST, TRK_1&2	Rail spur 3, including Tracks 1 & 2 loading that was relocated to spur 3, will have the potential to emit toxic chemicals post-project. Loading vapors will be captured and vented to the H-907 incinerator for emissions control. Vapors that passed through uncombusted were modeled as a point source (source IDs SP3_ST, TRK_1&2) and combustion products were modeled using identical source location and parameters of the stack to which they will vent (source ID H907_908). Stack parameters were provided by the facility.
Pipeline Component and Process Unit Fugitive Emissions	TKFUG, FUGTKFM2, FUGTKFM3, FUGTKFM4, FUGTKFM5, FUGTKFM7, FUGTKFM9, FUGT1000, F_AB_HTR, F_NAPH, F_INLN, F_AMFGT, F_SWS, F_CAUSTC, F_R1_1A, F_R2, F_R18, F_VR, F_LPG, F_R23, F_ORG, F_SPENT, F_SP3, F_WW_CR, F_LSS, F_BLRS, F_PIPEFL, F_FGSYSA, F_FGSYSB, F_FL_VRS, F_FLARES, F_INCIN, F_SCRUB, F_RF1ST, F_RF2ND, F_RF_B, F_NWFVRS, F_NEW_FL, F_SCR, F_AMREG, F_BH2S, F_R6, F_R7, F_R8, F_R12, F_R19, F_R20, F_R21, F_SVE1, F_SVE234, F_SVE5, F_H2REF, F_PRE_WW, F_VR_NEW, F_NEWSWS, F_UA_SOX, F_DMDS, F_SPCLAY, F_PROPNE, F_BAMINE, F_WW_HYD, F_H2GEN, F_PRE	Emissions from piping components were modeled as area sources (AREA or AREAPOLY) with a release height of 2 meters, except for F_PRE (Pretreat unit fugitives) which was modeled as a VOLUME source with a release height of 25 feet (center of volume) as most emissions are released from within a building.

Source	Source ID	Description
Combustion Sources	B7, B8, B9, H401_402, H907_908, H102, H101, H501_502, H350, H351, H151, NEWFLARE	Combustion sources were modeled as point sources with stack parameters appropriate for each source. Stack parameters were provided by the facility. H401_402 and H907_908 receive vents from and control emissions from units.
Hydrogen Plant	H2VENT	The hydrogen plant deaerator vent is expected to have a potential to emit toxic chemicals post-project. The hydrogen plant has multiple vents and was modeled as a volume source with a release height of 10 feet.
Sour Water Stripper	PVENT907, PVENT401	The Unit A and Unit B amine acid units vent to H-401 and H-907, respectively. The vents were modeled as point sources with location and parameters equal to the H-401 and H-907 stacks.
Wastewater Treatment	WW_EXIST, WW_NEW	The wastewater treatment sources were modeled as area sources with a release height of 2 meters.
Cooling Towers	CT500, CT800	Cooling towers Y-500 and Y-501 were modeled as a single volume source (CT500) with a release height of 9.5 feet based on the height of the cooling towers. Cooling towers Y-800, Y-801 and Y-802 were modeled as a single volume source (CT800) with a release height of 7 feet based on the height of the cooling towers.
Truck Traffic	TRK_001 through TRK_247	The truck traffic emissions were modeled as volume line sources that follow the expected typical truck routes within the facility.
Offsite Rail Mover	UPRAIL	The offsite rail mover was modeled as an area source operating from 10 AM to 6 PM Monday through Saturday. Only the portion of rail immediately adjacent to the facility was considered.

For modeling purposes, all sources with the exception of the Union Pacific offsite rail mover (UPRAIL) were assumed to operate 24 hours per day, 7 days per week, and 52 weeks per year. The rail mover was assumed to operate 8 hours per day, Monday through Saturday. Source parameters are provided in Exhibit B. Emissions rates of each toxic substance are provided by source and for the entire facility in Exhibit C.

3.3 Air Dispersion Modeling

Dispersion modeling for this HRA was performed using AERMOD, v 21112. AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting cumulative concentrations from many point, area, and volume sources at numerous specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts in terrain ranging from flat to complex.

For both the pre-project and post-project modeling, two model runs were performed – one for sources that operate continuously, and one for sources that operate only specific hours of the day. All sources generally operate continuously, with the exception of the Union Pacific rail mover which only operates from 10 AM to 6 PM Monday through Saturday. The model runs for the rail mover reflected this operating schedule, and hourly emission rates were adjusted to properly account for the non-continuous nature of operation[8].

3.3.1 Meteorological data

The AERMOD-ready meteorological data sets for years 2012-2016 for the Long Beach, CA monitoring station were used for the analysis. These data sets were developed by SCAQMD using AERMET version 16216, the AERMOD meteorological data preprocessor, and provided for use in this analysis. The Long Beach meteorological station appears to be the most representative station to the Paramount facility as it is in close proximity (approximately 6 miles south of the plant) and there are no intervening terrain features. A windrose showing a graphical distribution of wind speed and wind direction for the time period modeled is included as Figure D-1 of the Exhibits.

3.3.2 Model Options

AERMOD was run with the regulatory default modeling options.

3.3.3 Terrain Characterization

AERMOD requires that each source in the analysis be categorized as being in either a rural or an urban setting. Consistent with SCAQMD guidance[9], all sources were designated as urban. An urban population of 9,818,605 (Los Angeles County) was input to AERMOD.

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[8] Per the HARP online Help menu, where emissions vary temporally (e.g., hourly or monthly), the annual emissions are required to sum to 31,536 kg/yr (i.e., 31,536 kg/yr = 1 g/s * 3600 s/hr * 8760 hr/yr). For the rail mover modeling, an hourly emission rate of 3.5 g/s was used for 8 hours per day, 6 days per week.

3.5 g/s * 8 hr/day * 6 day/wk * 52.14 wk/yr * 3600 s/hr = 31,536 kg/yr

[9] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

Source and receptors were modeled with consideration of terrain elevations. The AERMOD terrain processor (AERMAP) was used to calculate terrain elevations for each source and receptor from the U.S. Geological Survey (USGS) National Elevation Dataset (NED). The terrain data is provided in electronic format to the City of Paramount Planning Department.

3.3.4 Receptors

Health effect indices such as cancer risk, chronic hazard index, and acute hazard index were calculated for a variety of receptor locations. Receptors of primary interest are those at residential locations, at sensitive population locations, and at offsite worker locations. However, in order to get a more complete picture of the patterns of exposure, concentrations and risk are also calculated at regularly spaced grid points throughout the modeling domain.

The receptors used to analyze project impacts include:

- 100-m spaced receptors outside the outer facility boundary
- 75-m spaced receptors along the facility boundary

Receptor spacing was within SCAQMD modeling guidelines[10], which requires a fenceline spacing of 75 meters or less for facility areas between 25 and 100 acres (Paramount site is approximately 60 acres). Receptor heights above ground were set to 0.0 meters, consistent with SCAQMD modeling guidance. This network is composed of Cartesian (X,Y) receptors with Universal Transverse Mercator (UTM) coordinates. The modeling was conducted using the North American Datum of 1983 (NAD83).

Sensitive receptor locations (schools, parks, and hospitals) were obtained via an internet search and the Google Maps database. The sensitive receptors used in the project analysis are listed in Table E-1 of the Exhibits.

Figure F-1 of the Exhibits shows the model representation of fenceline, grid and sensitive receptors. A total of 855 fenceline and grid receptors were included in the analysis, plus an additional 12 sensitive receptors and 6 residential receptors[11] in the mobile home parks directly east of the facility, for a total of 873 receptors.

Additionally, to calculate population exposure and cancer burden, two separate dispersion modeling runs were performed. First, a 500-m spaced receptor grid outside the outer facility boundary was used to identify the model extents of the one-per-million 70-yr exposure isopleth. Then, a second dispersion model was run with receptors located at the centroid of census tracts whose centroid was located within the one-per-million isopleth. The HARP model contains the census tract centroid

[10] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

[11] 6 residential receptors were added to the grid in the mobile home parks directly east of the facility across Lakewood Boulevard, to ensure sufficient receptor grid density to capture the maximum impacted residential locations.

UTM coordinates and population values from the 2010 census; this data was exported from HARP to create the census tract centroid receptor grid. A total of 859 census tract centroid receptors were modeled; Figure F-2 of the Exhibits shows these receptor locations.

3.3.5 Building Downwash

When point sources are located near or on buildings or structures, the dispersion of the plume can be influenced. The wake produced on the lee side (i.e., down-wind) of the structure can cause the plume to be pulled toward the ground near the structure resulting in higher concentrations. This is called building downwash. Stack heights that minimize downwash effects are designated good engineering practice (GEP) stack heights.

The effects of building downwash have been examined in this modeling analysis. AERMOD uses the U.S. EPA-approved Building Profile Input Program with Plume Rise Model Enhancements (BPIP-PRIME) to provide input for the downwash analysis. This program calculates the GEP formula stack heights and direction-specific building dimensions for input to the dispersion calculations. BPIP-PRIME requires the input of building coordinates and heights, and stack coordinates. Each storage tank was included as a building/structure in the BPIP-PRIME run. Additionally, buildings deemed to potentially cause downwash effects on the modeled point sources were also included.

Figure 5 and Figure 6 above show the locations of point sources and potential downwash structures used in the modeling.

3.3.6 Modeled Concentrations

The AERMOD output is the normalized ground level concentration at each receptor from each source based on an emission rate of one gram per second (χ/Q or Chi over Q). When AERMOD is run outside of HARP, HARP relies on a list of AERMOD "plotfiles" (files containing model results at each receptor for each source and averaging period) and annual and maximum hourly emission rates for each toxic substance by source. Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance.

Note that the maximum 1-hr concentrations are based on the conservative assumption that all sources emit at the maximum rate 24 hours per day, 365 days per year.

For both the pre-project and post-project modeling, two HARP runs were performed – one for sources that operate continuously, and one for the Union Pacific rail mover which only operates from 10 AM to 6 PM Monday through Saturday. The cancer and chronic risk from the two runs were summed together in a spreadsheet to get the final cancer and chronic risk values.

HARP calculates cancer risk based on annual average concentrations. For worker cancer calculations, by default HARP assumes that emissions occur continuously, and the worker is exposed to the average concentration 40 hours per week. When emission sources are not continuous, a portion of the hours during the year have zero emissions and therefore would have zero exposure. If those zero hours occur when a worker is not present, worker risk would be underestimated. Thus,

a "worker adjustment factor" (WAF) needs to be applied to scale the exposure to account for worker and source emission schedule overlap. The WAF is calculated as follows:

$WAF = H_{residential}/H_{source} \times D_{residential}/D_{source}$

Where:

$H_{residential}$= the number of hours per day the long-term residential concentration is based on (always 24 hours)

H_{source} = the number of hours the source operates per day

$D_{residential}$ = the number of days per week the long-term residential concentration is based on (always 7 days)

D_{source}= the number of days the source operates per week

For the UP rail mover HARP modeling, the WAF was 24/8 x 7/6 = 3.5.

4.0 RISK CHARACTERIZATION

As described above, the ground level concentrations of each toxic substance emitted are calculated by HARP. HARP analyzes this data to calculate cancer risk and non-cancer risks. HARP provides several analysis methods to perform these calculations; the methods chosen for this project follow SCAQMD guidance[12] and are shown in Table 8, below.

Table 8. Analysis Methods Used in Risk Modeling

Risk	Method
Residential cancer risk	RMP Using the Derived Method
Worker cancer risk	OEHHA Derived Method
Residential chronic and 8-hr chronic risk	OEHHA Derived Method
Worker chronic and 8-hr chronic risk	OEHHA Derived Method
Acute risk	Default/NA

As the entire modeling domain is an urban area, the exposure pathways chosen for this analysis were inhalation, home grown produce, dermal absorption, soil ingestion, and mother's milk for residential exposure and inhalation, dermal absorption, and soil ingestion for worker pathways. Pathways of fish ingestion, dairy milk ingestion, drinking water consumption, and meat ingestion were not used as the facility does not impact a local fishable body of water, grazing land, dairy, or water reservoir.

[12] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 8.

Per SCAQMD guidance for HARP modeling[13], a deposition velocity of 0.02 m/s was assumed for the non-inhalation pathways. Default values for all pathways were used with the exception of the dermal pathway which assumed a "warm" climate.

4.1 Carcinogens

The cancer health impacts are characterized as a cancer risk that represents the chances per million people of developing cancer. The cancer risk from each substance is added together to arrive at a total cancer risk. The exposure durations modeled in HARP followed OEHHA and SCAQMD guidance and are shown in Table 9, below.

Table 9. Exposure Durations

Risk type	Exposure Duration
Residential and sensitive receptor cancer risk[14]	24 hr/day, 350 day/yr, 30 years
Cancer burden	24 hr/day, 350 day/yr, 70 years
Worker cancer risk	8 hr/day, 250 day/yr, 25 years

The cancer risk presented in this analysis was calculated by subtracting the pre-project cancer risk from the post-project cancer risk at each receptor. Cancer risk decreased at most receptors but did increase in the general vicinity of the northeast portion of the facility where several loading racks and associated piping will be relocated. The contribution to the risk by pollutant and by source for the net risk (post-project minus pre-project) will not be presented because of certain fundamental changes to the model from the project. For instance, if a source or pollutant was removed, the contribution would be a negative percent, which is nonsensical because it no longer exists or contributes to the risk. Therefore, only the contributions to the post-project risk by pollutant and by source are presented.

4.1.1 Maximum Exposed Individual Resident (MEIR)

The highest cancer risk increase at a residential receptor (#17) was a cancer risk value of 6.8 in one million. The receptor was located east of the facility at a mobile home park across Lakewood Boulevard. The contribution of benzene and naphthalene were 61.2% and 18.5% of the risk, respectively, and were primarily from potential fugitive emissions from piping components and storage tanks. DPM from projected onsite truck traffic and the rail mover contributed 9.8% of the risk.

The complete itemization of the contributions to the cancer risk by substance and by source at the MEIR are provided in Table G-1, Table G-2, Table H-1, and Table H-2 of the Exhibits. Figure I-1 of the

[13] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 6.

[14] Sensitive receptors were conservatively treated as residential receptors in this analysis. This approach likely overestimates risk as it assumes 30 years of exposure.

Exhibits shows the location of the MEIR. A contour map showing the 30-yr residential cancer risk is included as Figure J-1.

4.1.2 Maximum Exposed Individual Worker (MEIW)

The receptor with the highest calculated worker cancer risk increase was a fenceline receptor (#849) on the eastern side of the facility where an auto body shop and auto parts store share a boundary with the facility. The worst-case worker cancer risk at this receptor was 1.3 per million. The contribution of benzene and naphthalene were 60.2% and 15.5% of the risk was due to benzene and naphthalene, respectively, and were primarily from fugitive emissions from piping components and storage tanks. DPM from onsite truck traffic and the rail mover contributed 16.2% of the risk.

The complete itemization of the contributions to the cancer risk by substance and by source at the MEIW are provided in Table G-1, Table G-2, Table H-1, and Table H-2 of the Exhibits. Figure I-1 of the Exhibits shows the location of the MEIW. A contour map showing the 25-yr worker cancer risk is included as Figure J-2.

4.1.3 Maximum Exposed Sensitive Receptor

The highest calculated cancer risk increase at a sensitive receptor was 2.8 per million, at Albert Baxter Elementary School (receptor #3) located about 150 meters east of the facility. The contribution of benzene, naphthalene and ethyl benzene were 63.0%, 17.9%, and 6.7% of the risk, respectively, and were primarily from fugitive emissions from piping components and storage tanks. DPM from onsite truck traffic and the rail mover contributed 5.9% of the risk. Note that receptor #3 was the only sensitive receptor showing an increase in cancer risk.

The complete itemization of the contributions to the cancer risk by substance and by source at the maximum exposed sensitive receptor are provided in Table G-1, Table G-2, Table H-1, and Table H-2 of the Exhibits. Figure I-1 of the Exhibits shows the location of the maximum exposed sensitive receptor.

Table 10, below provides the cancer risk at all sensitive receptors.

Table 10. Cancer Risk at Sensitive Receptors

Sensitive Receptor Name	Receptor Number	UTM Coordinates (NAD83)		Increased Cancer Cases (in-one-million)[15]
		Easting (m)	Northing (m)	
Albert Baxter Elementary School	3	394492	3751457	2.8
Kaiser Permanente Bellflower Medical	12	395180	3751878	-0.1
Golden Park	11	393957	3752418	-0.2
Alondra Middle School	6	393718	3750251	-0.4
Roosevelt Elementary School	10	393024	3752726	-0.6
Abraham Lincoln School	7	392934	3751056	-0.9

[15] Cancer risk was calculated by subtracting the pre-project risk from the post-project risk. When the pre-project risk exceeds the post-project risk, values are negative.

Sensitive Receptor Name	Receptor Number	UTM Coordinates (NAD83)		Increased Cancer Cases (in-one-million)[15]
		Easting (m)	Northing (m)	
Progress Park	5	393690	3750768	-0.9
Paramount Park	9	392908	3751851	-1.0
Jefferson Elementary School	4	393779	3750836	-1.3
Paramount Park Middle School	8	393067	3751689	-1.4
Wirtz Elementary School	1	393649	3751859	-2.3
Paramount High School	2	393497	3751655	-3.8

4.1.4 Population Exposure and Cancer Burden

To determine population exposure, modeling was performed at receptors located at the centroid of all census tracts whose centroid was located within the modeling domain. Both AERMOD and HARP were run in the manner as was done previously, except with the census tract centroid receptors instead of fenceline, grid, and sensitive receptors. The 70-yr residential cancer risk was calculated at each of these receptors. For any receptor with a cancer risk greater than one per million, the population of the census tract represented by that receptor was summed to determine the total exposure to various levels of cancer risk. The results of these calculations are provided in Table 11, below.

Table 11. Population Exposure

Cancer Risk	Population	
	Pre-Project 70-yr exposure	Post-Project 70-yr exposure
1 to <10 in a million	37,584	13,556
10 to <25 in a million	1,643	784
25 to <100 in a million	14	0
100 to <1000 in a million	0	0
>=1000 in a million	0	0
Total >= 1 in a million	**39,241**	**14,340**

Additionally, cancer burden was calculated based on the total population exposed to 70-yr cancer risk above one per million. The population of each census tract was multiplied by the 70-yr cancer risk calculated at the representative receptor. These products were summed, and the cancer burden was determined to be 0.099 for the pre-project case and 0.041 for the post-project case. Therefore, there is a net reduction of 0.057 in cancer burden, or 0.057 fewer expected cancer cases within the modeled area, as a result of this project. A contour map showing the one per million cancer risk based on 70-yr exposure based on pre-project and post-project emissions is included as Figure J-3 of the Exhibits.

4.2 Non-Carcinogens

The increase in non-cancer health impacts is characterized through a hazard index (HI). When more than one chemical is considered, it is assumed that the effects are additive provided the associated

chemicals are expected to have an adverse impact on the same target organ system (respiratory system, liver, etc.). Thus, chemical-specific hazard indices are summed to arrive at a hazard index for each target organ. For any organ system, a total hazard index exceeding 1.0 indicates a potential health effect. Although the assumption of additivity of exposure to multiple chemicals ignores possible antagonistic or synergistic interactions, this approach has been accepted by regulatory agencies as generally conservative.

The chronic risk increases presented in this analysis were calculated as a net change by subtracting the pre-project risk from the post-project risk at each receptor. Acute risk is not a cumulative or long-term effect, and therefore, was based solely on the post-project emissions (pre-project acute risk was not subtracted/considered). The contribution to the risk by pollutant and by source for the net risk (post-project minus pre-project) will not be presented because of certain fundamental changes to the model from the project. For instance, if a source or pollutant was removed, the contribution would be a negative percent, which is nonsensical because it no longer exists or contributes to the risk. Therefore, only the contributions to the post-project risk by pollutant and by source are presented.

4.2.1 Chronic HI

The increase in chronic hazard index was below one at all receptors. The chronic risk increase at the maximum exposed individual receptor was a hazard index of 0.16, at worker receptor #769 located immediately south of the facility. Risk was primarily due to hydrogen sulfide (45.1%) and sulfuric acid (44.2%). The sources contributing most of the risk were fugitive emissions from piping components from various process units (approximately 50%) followed by boilers and heaters (approximately 45%).

The associated target organ/system was the respiratory system. The complete itemization of contributions to the chronic risk by substance and by source at the maximum exposed individual chronic risk receptor are provided in Table G-3, Table G-4, Table H-3, and Table H-4 of the Exhibits. Figure I-1 of the Exhibits shows the location of these receptors. As the maximum chronic risk was below 0.5 at all receptors, no contour map was generated.

4.2.2 Acute HI

The increase in acute hazard index at the maximum exposed individual receptor was 0.93, at fenceline receptor #866 located on the southern boundary of the facility. Over 99% of the acute risk increases was from hydrogen sulfide primarily associated with piping components in various process units with the Unit B H_2S Recovery Unit being the largest contributor. The target organ/system for the highest acute risk was the central nervous system.

The complete itemization of the contributions to the acute risk by substance and by source is provided in Table G-5, Table G-6, Table H-5, and Table H-6 of the Exhibits. Figure I-1 of the Exhibits shows the location of these receptors. A contour map showing the acute risk is included in the Exhibits as Figure J-4. Note that the acute risk presented in this report was based on the

conservative assumption that all emission sources were emitting at their respective maximum rates simultaneously, 24 hours per day and 365 days per year.

5.0 CONCLUSION

The results of the HRA indicate that the project will not cause cancer risk increases greater than 10 per million at any valid receptor and will cause a decrease in cancer burden. Additionally, chronic and acute risk increases from project emissions are below a hazard index of 1.0.

EXHIBIT A. SUBSTANCES EMITTED

Table A-1. Substances Emitted – Pre-Project Modeling

CAS Number	Substance Name	CAS Number	Substance Name
83-32-9	Acenaphthene	206-44-0	Fluoranthene
208-96-8	Acenaphthylene	86-73-7	Fluorene
75-07-0	Acetaldehyde	50-00-0	Formaldehyde
107-02-8	Acrolein	110-54-3	Hexane
7664-41-7	Ammonia	7783-06-4	Hydrogen Sulfide
120-12-7	Anthracene	193-39-5	Indeno(1,2,3-c,d)pyrene
71-43-2	Benzene	78-79-5	Isoprene
56-55-3	Benzo(a)anthracene	7439-96-5	Manganese
50-32-8	Benzo(a)pyrene	7439-97-6	Mercury
205-99-2	Benzo(b)fluoranthene	67-56-1	Methanol
192-97-2	Benzo(e)pyrene	56-49-5	3-Methylcholanthrene
191-24-2	Benzo(g,h,i)perylene	91-57-6	2-Methylnaphthalene
207-08-9	Benzo(k)fluoranthene	91-20-3	Naphthalene
106-99-0	1,3-Butadiene	7440-02-0	Nickel
7440-43-9	Cadmium	1151	PAHs
18540-29-9	Chromium (VI)	198-55-0	Perylene
218-01-9	Chrysene	85-01-8	Phenanthrene
7440-50-8	Copper	75-56-9	Propylene Oxide
98-82-8	Cumene	129-00-0	Pyrene
110-82-7	Cyclohexane	108-88-3	Toluene
53-70-3	Dibenzo(a,h)anthracene	95-63-6	1,2,4-Trimethylbenzene
9901	Diesel Exhaust Particulate	540-84-1	2,2,4-Trimethylpentene
57-97-6	7,12-Dimethylbenz(a)anthracene	1330-20-7	Xylenes

Table A-2. Substances Emitted – Post-Project Modeling

CAS Number	Substance Name	CAS Number	Substance Name
95-63-6	1,2,4-Trimethylbenzene	53-70-3	Dibenz[a,h]anthracene
95-50-1	1,2-Dichlorobenzene	9901	Diesel engine exhaust (Diesel PM)
540-84-1	2,2,4-Trimethylpentane	100-41-4	Ethyl benzene
91-57-6	2-Methyl naphthalene	74-85-1	Ethylene
56-49-5	3-Methylcholanthrene	206-44-0	Fluoranthene
57-97-6	7,12-Dimethylbenz[a]anthracene	86-73-7	Fluorene
83-32-9	Acenaphthene	50-00-0	Formaldehyde
208-96-8	Acenaphthylene	110-54-3	Hexane
75-07-0	Acetaldehyde	7647-01-0	Hydrochloric acid
107-02-8	Acrolein	7783-06-4	Hydrogen sulfide
7664-41-7	Ammonia	193-39-5	Indeno[1,2,3-cd]pyrene
120-12-7	Anthracene	78-79-5	Isoprene
56-55-3	Benz[a]anthracene	67-56-1	Methanol
71-43-2	Benzene	91-20-3	Naphthalene
50-32-8	Benzo[a]pyrene	85-01-8	Phenanthrene
205-99-2	Benzo[b]fluoranthene	115-07-1	Propylene
191-24-2	Benzo[g,h,i]perylene	129-00-0	Pyrene
207-08-9	Benzo[k]fluoranthene	1175	Silica, crystalline (respirable)
218-01-9	Chrysene	7664-93-9	Sulfuric acid
98-82-8	Cumene	108-88-3	Toluene
110-82-7	Cyclohexane	1330-20-7	Xylenes (mixed)

EXHIBIT B. SOURCE PARAMETERS

Table B-1. Pre-Project POINT Source Parameters

Source Description	Stack ID	Stack Height (ft)	Stack Height (m)	Stack Gas Exit Temperature (°F)	Stack Gas Exit Temperature (K)	Stack Gas Exit Velocity (ft/s)	Stack Gas Exit Velocity (m/s)	Stack Gas Exit Flow Rate (ft^3/m)	Stack Gas Exit Flow Rate (m^3/s)	Stack Diameter (ft)	Stack Diameter (m)	UTM Coordinates (NAD83) East (m)	UTM Coordinates (NAD83) North (m)	Base Elevation (m)	Stack Release Type
D374	2	25.0	7.6	550.0	560.9	96.5	29.4	49220	23.2	3.3	1.00	393999.7	3751342.3	23.47	Vertical
D375	3	25.0	7.6	479.9	522.0	85.7	26.1	42673	20.1	3.3	0.99	393989.7	3751342.3	23.47	Vertical
D376	4	25.0	7.6	490.0	527.6	200.7	61.2	141765	66.9	3.9	1.18	393996.0	3751330.1	23.47	Vertical
Cogen	6	50.0	15.2	312.0	428.7	70.7	21.5	67280	31.8	4.5	1.37	393816.1	3751459.7	23.47	Vertical
Heater 101	21	40.0	12.2	880.1	744.3	26.3	8.0	25019	11.8	4.5	1.37	393742.4	3751557.7	23.47	Vertical
Heater 102	22	28.0	8.5	880.1	744.3	18.4	5.6	7717	3.6	3.0	0.91	393742.4	3751563.2	23.47	Vertical
Heater 301	23	47.7	14.6	935.0	774.8	21.3	6.5	16607	7.8	4.1	1.24	393665.4	3751608.2	23.47	Vertical
Heater 302	24	50.0	15.2	935.0	774.8	15.2	4.6	14493	6.8	4.5	1.37	393664.4	3751593.7	23.42	Vertical
Heaters 303, 304, 305 & 306	25	49.4	15.1	755.3	675.0	1.4	0.4	2900	1.4	6.7	2.03	393654.9	3751578.2	23.16	Vertical
Heater 402	26	150.0	45.7	1310.1	983.2	5.7	1.7	4310	2.0	4.0	1.22	393751.5	3751526.7	23.47	Vertical
Heater 501/502	27	50.8	15.5	725.1	658.2	5.2	1.6	12005	5.7	7.0	2.13	393742.4	3751540.7	23.47	Vertical
D30	28	80.0	24.4	760.0	677.6	15.1	4.6	19640	9.3	5.2	1.60	393979.9	3751331.5	23.47	Vertical
D31	29	69.0	21.0	910.0	760.9	36.7	11.2	13761	6.5	2.8	0.86	393954.5	3751397.9	23.47	Vertical
D123	30	40.0	12.2	400.0	477.6	18.2	5.6	7648	3.6	3.0	0.91	393989.5	3751436.7	23.77	Vertical
D124	31	40.0	12.2	400.0	477.6	18.2	5.6	7648	3.6	3.0	0.91	393994.0	3751436.7	23.77	Vertical
D125	32	47.3	14.4	400.0	477.6	18.2	5.6	7648	3.6	3.0	0.91	393889.3	3751451.2	23.47	Vertical
D126	33	64.0	19.5	700.1	644.3	6.6	2.0	2756	1.3	3.0	0.91	393936.1	3751427.4	23.47	Vertical
D127	34	64.0	19.5	700.1	644.3	6.6	2.0	2756	1.3	3.0	0.91	393936.1	3751420.2	23.47	Vertical
D26	35	35.0	10.7	780.0	688.7	22.2	6.8	16794	7.9	4.0	1.22	394039.1	3751343.7	23.47	Vertical
D29	36	55.0	16.8	665.0	624.8	21.0	6.4	30060	14.2	5.5	1.68	393995.4	3751348.7	23.47	Vertical
D27	37	65.0	19.8	950.1	783.2	20.9	6.4	13777	6.5	3.7	1.14	394032.6	3751338.2	23.47	Vertical
D28	38	45.0	13.7	780.0	688.7	15.5	4.7	9012	4.3	3.5	1.07	394047.4	3751344.2	23.47	Vertical
D128	39	71.0	21.6	400.0	477.6	4.3	1.3	1269	0.6	2.5	0.76	393879.3	3751406.8	23.47	Vertical
D129	40	71.0	21.6	400.0	477.6	4.3	1.3	1269	0.6	2.5	0.76	393879.3	3751411.2	23.47	Vertical
Heater 905	41	15.0	4.6	520.3	544.4	16.4	5.0	1917	0.9	1.6	0.48	393887.4	3751465.7	23.47	Vertical
Heater 907	42	39.0	11.9	850.0	727.6	30.9	9.4	12982	6.1	3.0	0.91	393767.7	3751532.8	23.47	Vertical

Table B-2. Pre-Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
5HDS PENEX unit	1	6.6	2.00	164.0	50.0	65.6	20	0	393757.4	3751539.7	23.47
Ben Sat Unit Fugitives	5	6.6	2.00	164.0	50.0	65.6	20	0	393757.4	3751539.7	23.47
Asphalt Fugitives	7	6.0	1.83	82.0	25.0	82.0	25	0	393900.0	3751400.0	23.47
Crude Fugitives1	8	6.6	2.00	114.8	35.0	131.2	40	0	394029.9	3751354.7	23.47
Crude Fugitives2	9	6.6	2.00	98.4	30.0	147.6	45	0	393983.9	3751353.7	23.47
HDS Fugitives	10	6.6	2.00	187.0	57.0	219.8	67	0	393670.0	3751530.0	23.16
Jet Fugitives	11	6.6	2.00	32.8	10.0	32.8	10	0	394073.4	3751375.7	23.77
TF-00-101 Fugitives	12	6.6	2.00	32.8	10.0	39.4	12	0	393996.4	3751472.7	23.77
TF-02 Fugitives	13	6.6	2.00	98.4	30.0	344.5	105	0	394116.4	3751547.7	24.09
TF-03 Fugitives	14	6.6	2.00	65.6	20.0	98.4	30	0	393803.4	3751586.7	23.47
TF-04 Fugitives	15	6.6	2.00	82.0	25.0	82.0	25	0	393948.4	3751551.7	23.77
TF-05 Fugitives	16	6.6	2.00	65.6	20.0	131.2	40	0	393978.4	3751563.7	23.77
TK-07 Fugitives	17	6.6	2.00	82.0	25.0	82.0	25	0	394055.4	3751405.7	23.77
TF-08 Fugitives	18	6.6	2.00	82.0	25.0	65.6	20	0	393863.4	3751532.7	23.47
TF-09 Fugitives	19	6.6	2.00	32.8	10.0	65.6	20	0	393641.4	3751552.7	23.16
Gasoline Blender Fugitives	20	6.6	2.00	82.0	25.0	23.0	7	0	393780.4	3751562.7	23.47
LPG Load Rack 22	43	6.0	1.83	65.6	20.0	32.8	10	0	393865.0	3751565.0	23.77
Load Racks 11, 13, 15, & 26	44	9.8	3.00	32.8	10.0	32.8	10	0	393897.4	3751451.7	23.47
Load Rack 1,2, & 14	45	9.8	3.00	49.2	15.0	32.8	10	0	394083.4	3751502.7	24.08
Load Racks 16, 17, & 18	46	19.7	6.00	32.8	10.0	164.0	50	28	394074.8	3751349.4	23.77
Load Racks 19,20, &21	47	9.8	3.00	54.1	16.5	75.5	23	0	394263.4	3751646.7	25.6
Load Racks 3,4,5, & 23	48	9.8	3.00	82.0	25.0	49.2	15	0	393830.4	3751543.7	23.47
Load Rack 6,7, 8, &12	49	9.8	3.00	65.6	20.0	98.4	30	0	393962.4	3751447.7	23.59
Rail Loading	50	13.1	4.00	295.3	90.0	32.8	10	-150	393962.3	3751332.0	23.47
LSR Chiller Unit Fugitives	51	6.6	2.00	39.4	12.0	59.1	18	0	393779.4	3751571.7	23.47
Naphtha Splitter Fugitives	52	6.6	2.00	32.8	10.0	32.8	10	0	394056.4	3751368.7	23.77

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
Naphtha Stripper Fugitives	53	6.6	2.00	65.6	20.0	131.2	40	0	393730.0	3751560.0	23.47
Pipe Fugitives from Tanks	138	6.0	1.83	98.4	30.0	426.5	130	31.464144	394131.0	3751374.3	24.01
Wastewater Treatment	139	6.0	1.83	65.6	20.0	32.8	10	33.424811	393640.0	3751535.0	23.16
Union Pacific Rail Mover	UPRAIL	15.0	4.57	1063.3	324.1	35.7	10.9	31.2	393562.1	3751546.9	23.16

Table B-3. Pre-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
T100001	54	56.0	17.07	28.2	8.6	394100.9	3751317.3	23.77
T100002	55	56.0	17.07	28.2	8.6	394141.4	3751324.1	23.77
T10001	56	40.2	12.24	10.6	3.2	393637.2	3751551.7	23.16
T10003	57	23.7	7.21	13.5	4.1	394098.5	3751407.0	23.77
T10004	58	36.7	11.20	11.1	3.4	394038.1	3751439.1	23.77
T10005	59	24.4	7.44	13.5	4.1	394002.2	3751534.8	23.77
T10006	60	24.5	7.47	13.5	4.1	394002.8	3751554.7	24.04
T10007	61	24.3	7.42	13.5	4.1	394003.8	3751574.8	24.08
T10008	62	49.3	15.04	9.7	3.0	394133.6	3751526.7	24.22
T10009	63	40.2	12.24	10.6	3.2	393637.2	3751567.2	23.16
T1012	64	15.7	4.80	5.4	1.6	393887.0	3751423.8	23.47
T1013	65	15.7	4.80	5.4	1.6	393877.4	3751423.8	23.47
T1014	66	16.0	4.88	5.4	1.6	394047.4	3751390.7	23.77
T1015	67	15.7	4.80	5.3	1.6	394046.4	3751409.2	23.77
T1019	68	24.3	7.42	4.5	1.4	393906.5	3751462.8	23.47
T1020	69	15.9	4.85	5.4	1.6	393869.6	3751526.7	23.47
T1021	70	15.9	4.85	5.4	1.6	393869.5	3751534.8	23.48
T1022	71	15.9	4.85	5.3	1.6	393869.4	3751543.0	23.66
T1023	72	15.7	4.80	5.4	1.6	393859.9	3751526.8	23.47
T1024	73	15.8	4.83	5.3	1.6	393859.9	3751534.9	23.47
T1025	74	15.7	4.78	5.3	1.6	393859.7	3751542.9	23.48

Table B-3. Pre-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
T1026	75	15.8	4.83	5.4	1.6	393859.8	3751552.7	23.65
T1027	76	15.8	4.83	5.4	1.6	393869.2	3751552.7	23.77
T1028	77	15.8	4.83	5.4	1.6	393849.6	3751542.9	23.47
T125001	78	41.2	12.55	37.5	11.4	394055.4	3751623.2	24.34
T125002	79	40.0	12.19	37.5	11.4	393888.7	3751611.7	23.77
T12501	80	40.9	12.47	12.0	3.7	393966.7	3751538.5	23.77
T12502	81	40.9	12.47	12.0	3.7	393966.2	3751569.2	23.77
T141	82	10.0	3.05	2.8	0.8	393834.2	3751425.7	23.31
T142	83	10.0	3.05	2.8	0.8	393841.3	3751425.5	23.42
T150001	84	56.0	17.07	35.0	10.7	394164.1	3751421.3	24.08
T150002	85	56.0	17.07	35.0	10.7	394136.3	3751368.9	24.01
T20001	86	39.9	12.17	15.0	4.6	394064.1	3751434.6	23.77
T20002	87	39.9	12.17	15.0	4.6	394089.2	3751429.6	24.08
T20003	88	39.9	12.17	15.0	4.6	394003.9	3751607.7	24.08
T20004	89	40.0	12.19	15.0	4.6	394003.9	3751637.4	24.08
T20005	90	40.1	12.22	15.0	4.6	393972.7	3751641.1	24.08
T2014	91	16.0	4.88	7.4	2.3	394044.6	3751420.2	23.77
T203	92	12.0	3.66	2.5	0.8	393885.2	3751535.6	23.76
T2044	93	23.5	7.16	6.0	1.8	393934.0	3751452.0	23.47
T2046	94	23.5	7.16	6.0	1.8	393933.9	3751462.0	23.47
T2047	95	23.5	7.16	6.0	1.8	393925.1	3751461.8	23.47
T2048	96	15.9	4.85	7.5	2.3	393915.4	3751450.5	23.47
T2049	97	15.9	4.85	7.5	2.3	393915.4	3751462.7	23.47
T25001	98	50.0	15.24	15.0	4.6	393801.1	3751638.2	23.77
T25002	99	50.0	15.24	15.0	4.6	393825.4	3751638.2	23.77
T25003	100	50.0	15.24	15.0	4.6	393825.3	3751613.7	23.77
T25004	101	49.6	15.11	15.0	4.6	393825.5	3751589.1	23.69
T25005	102	50.0	15.24	15.0	4.6	394133.7	3751603.0	24.38
T25006	103	50.0	15.24	15.0	4.6	394133.7	3751575.8	24.38
T25007	104	48.0	14.63	15.0	4.6	394133.7	3751548.2	24.38
T25008	105	50.0	15.24	15.0	4.6	394176.5	3751638.3	24.72

Table B-3. Pre-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
T25009	106	50.0	15.24	15.0	4.6	394109.3	3751562.2	24.24
T2501	107	30.2	9.19	6.2	1.9	393850.1	3751533.6	23.47
T3001	108	23.1	7.04	7.4	2.3	394059.8	3751391.6	23.77
T35001	109	40.1	12.22	20.0	6.1	393970.6	3751613.0	24.08
T3501	110	16.1	4.90	10.0	3.0	394106.9	3751422.5	24.05
T50001	111	49.8	15.19	21.5	6.6	394133.5	3751636.5	24.52
T50002	112	50.3	15.32	21.5	6.6	394181.4	3751602.7	24.69
T50003	113	47.7	14.53	22.5	6.9	394106.2	3751529.3	24.08
T50004	114	47.7	14.53	22.5	6.9	393795.7	3751608.2	23.69
T50005	115	48.0	14.63	21.5	6.6	394225.6	3751483.3	24.38
T50006	116	48.0	14.63	21.5	6.6	394212.7	3751452.8	24.38
T50007	117	47.7	14.55	21.5	6.6	394190.4	3751483.3	24.38
T50008	118	47.7	14.55	21.5	6.6	394190.4	3751483.3	24.38
T5001	119	28.0	8.53	9.0	2.7	393928.9	3751359.0	23.47
T5002	120	28.0	8.53	9.0	2.7	393929.0	3751371.2	23.47
T5003	121	28.1	8.56	9.0	2.7	393929.0	3751383.8	23.47
T5004	122	30.5	9.30	8.6	2.6	393900.0	3751378.1	23.47
T5005	123	30.5	9.30	8.6	2.6	393912.9	3751377.6	23.47
T5006	124	40.0	12.19	7.5	2.3	393920.8	3751532.3	23.77
T5007	125	40.0	12.19	7.5	2.3	393920.7	3751547.9	23.77
T509	126	18.0	5.49	4.0	1.2	393868.6	3751407.6	23.46
T512	127	18.0	5.49	4.0	1.2	393878.2	3751531.3	23.59
T513	128	18.0	5.49	4.0	1.2	393878.1	3751537.7	23.75
T514	129	18.0	5.49	4.0	1.2	393878.5	3751543.5	23.77
T5501	130	29.4	8.97	9.0	2.7	394083.3	3751411.1	23.77
T6001	131	39.2	11.96	7.9	2.4	394081.7	3751392.5	23.77
T6002	132	39.7	12.09	7.9	2.4	394093.3	3751392.7	23.77
T776	133	24.0	7.32	3.8	1.1	393851.6	3751552.5	23.51
T777	134	18.0	5.49	4.0	1.2	393867.9	3751419.3	23.47
T80001	135	41.4	12.62	29.3	8.9	394102.7	3751474.8	24.08
T80002	136	40.9	12.47	29.3	8.9	394039.9	3751478.2	23.77

Table B-3. Pre-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
T80003	137	40.3	12.27	30.0	9.2	394055.4	3751555.0	24.08

Table B-4. Pre-Project AREAPOLY Source Parameters

Source Description	Model ID	Release Height (ft)	Release Height (m)	Number of Vertices	Base Elevation (m)	UTM Coordinates Easting/ Northing (m)	(m)
Onsite Railcar Mover	142	15.0	4.57	13	23.16	393637.2	3751503.9
						393703.9	3751461.1
						393736.7	3751437.6
						393845.9	3751368.9
						393859.7	3751393.2
						393820.0	3751410.9
						393775.7	3751439.1
						393811.5	3751437.9
						393810.8	3751446.4
						393754.8	3751449.5
						393689.6	3751483.9
						393641.8	3751512.4
						393637.2	3751503.9

Table B-5. Pre-Project VOLUME Source Parameters

Source Description	Model ID	Release Height (ft)	Release Height (m)	Init. Horizontal Dimension (ft)	Init. Horizontal Dimension (m)	Init. Vertical Dimension (ft)	Init. Vertical Dimension (m)	UTM Coordinates Easting/ Northing (m)	(m)	Base Elevation (m)
Onsite trucks	ML002958-3042 NL002149-2218 SL002859-2957	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		

Table B-6. Post-Project POINT Source Parameters

Source Description	Stack ID	Stack Height		Stack Gas Exit Temperature		Stack Gas Exit Velocity		Stack Gas Exit Flow Rate		Stack Diameter		UTM Coordinates (NAD83)		Base Elevation	Stack Release Type
		(ft)	(m)	(°F)	(K)	(ft/s)	(m/s)	(ft^3/m)	(m^3/s)	(ft)	(m)	East (m)	North (m)	(m)	
Boiler No. 7	B7	100.0	30.5	520.0	544.3	21.8	6.6	65747	31.0	8.0	2.44	393997.9	3751328.9	23.47	Vertical
Boiler No. 8	B8	100.0	30.5	520.0	544.3	21.8	6.6	65747	31.0	8.0	2.44	393997.9	3751328.9	23.47	Vertical
Boiler No. 9	B9	100.0	30.5	520.0	544.3	21.8	6.6	65747	31.0	8.0	2.44	393997.9	3751328.9	23.47	Vertical
Heater 101 (vents to H501/502 stack)	H101	50.8	15.5	725.1	658.2	5.2	1.6	12005	5.7	7.0	2.13	393742.4	3751542.5	23.47	Vertical
Heater 102 (vents to H501/502 stack)	H102	50.8	15.5	725.1	658.2	5.2	1.6	12005	5.7	7.0	2.13	393742.4	3751542.5	23.47	Vertical
Heater H-151 (H2 plant)	H151	100.0	30.5	280.0	410.9	29.8	9.1	169672	80.1	11.0	3.35	393932.0	3751536.0	23.77	Vertical
Heater H-350 (vents to SCR common stack to H-351)	H350	100.0	30.5	600.0	588.7	20.9	6.4	48226	22.8	7.0	2.13	394018.4	3751369.1	23.47	Vertical
Heater H-351 (vents to SCR common stack to H-350)	H351	100.0	30.5	600.0	588.7	20.9	6.4	48226	22.8	7.0	2.13	394018.4	3751369.1	23.47	Vertical
Heaters 401 and 402 (common stack)	H401_402	150.0	45.7	500.0	533.2	26.1	7.9	11051	5.2	3.0	0.91	393751.9	3751524.5	23.47	Vertical
Heaters 501 and 502 (common stack)	H501_502	50.8	15.5	725.1	658.2	5.2	1.6	12005	5.7	7.0	2.13	393742.4	3751542.5	23.47	Vertical
Heater 907 and 908 (common stack)	H907_908	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
New flare	NEWFLARE	135.0	41.1	240.0	388.7	246.7	75.2	142397	67.2	3.5	1.07	394037.3	3751468.4	23.77	Vertical
Pretreat unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	50.0	15.2	-459.7	0.0	0.0	0.0	17	0.0	3.3	1.00	394083.4	3751470.3	24.08	Vertical
Unit A amine acid gas, sour water stripper gas, and waste water stripper gas vent streams (vents to H-401)	PVENT401	150.0	45.7	500.0	533.2	19.7	6.0	8355	3.9	3.0	0.91	393751.9	3751524.5	23.47	Vertical
Unit B amine acid gas, sour water stripper gas, and sour water stripper plus degasser vent streams (vents to H-907)	PVENT907	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 18 stack emissions (vents to H-907)	R18_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical

Table B-6. Post-Project POINT Source Parameters

Source Description	Stack ID	Stack Height		Stack Gas Exit Temperature		Stack Gas Exit Velocity		Stack Gas Exit Flow Rate		Stack Diameter		UTM Coordinates (NAD83)		Base Elevation	Stack Release Type
		(ft)	(m)	(°F)	(K)	(ft/s)	(m/s)	(ft^3/m)	(m^3/s)	(ft)	(m)	East (m)	North (m)	(m)	
Load rack 19 stack emissions (vents to H-907)	R19_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 20 stack emissions (vents to H-907)	R20_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 21 stack emissions (vents to H-907)	R21_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 60 & 61 stack emissions (vents to H-907)	R6061_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 70 & 71 stack emissions (vents to H-907)	R7071_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Load rack 80 & 81 stack emissions (vents to H-907)	R8081_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Spent Caustic Loading Rack (vents to H-401)	SP_CAUST	150.0	45.7	500.0	533.2	19.7	6.0	8355	3.9	3.0	0.91	393751.9	3751524.5	23.47	Vertical
Railroad Spur 3 load rack stack emissions (vents to H-907)	SP3_ST	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical
Tank 1000 - Vents to H-401	T1000	150.0	45.7	500.0	533.2	19.7	6.0	8355	3.9	3.0	0.91	393751.9	3751524.5	23.47	Vertical
Tank 150001 - Vents to carbon canister	T150001	3.0	0.9	-459.7	0.0	0.0	0.0	0	0.0	0.2	0.05	394141.6	3751421.4	24.08	Vertical
Tank 20001 - Vents to carbon canister	T20001	3.0	0.9	-459.7	0.0	0.0	0.0	0	0.0	0.2	0.05	394071.8	3751422.9	23.77	Vertical
Tank 20002 - Vents to carbon canister	T20002	3.0	0.9	-459.7	0.0	0.0	0.0	0	0.0	0.2	0.05	394079.2	3751422.0	23.78	Vertical
Tank 50005 - Vents to carbon canister	T50005	3.0	0.9	-459.7	0.0	0.0	0.0	0	0.0	0.2	0.05	394226.1	3751496.9	24.60	Vertical
Tank 50006 - Vents to carbon canister	T50006	3.0	0.9	-459.7	0.0	0.0	0.0	0	0.0	0.2	0.05	394219.8	3751440.4	24.38	Vertical
Track 1&2: Vents to H-907	TRK_1&2	39.0	11.9	500.0	533.2	94.1	28.7	39526	18.7	3.0	0.91	393883.0	3751410.0	23.47	Vertical

Table B-7. Post-Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
Fugitive Components - Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)	F_AB_HTR	6.6	2.00	49.2	15.0	49.2	15	0.0	393736.1	3751557.1	23.47
Fugitive Components - Unit A Amine/Fuel Gas Treating Unit	F_AMFGT	6.6	2.00	131.2	40.0	82.0	25	0.0	393685.1	3751497.6	23.16
Fugitive Components - Unit A Amine Regeneration Unit	F_AMREG	6.6	2.00	82.0	25.0	180.4	55	0.0	393725.4	3751472.3	23.16
Fugitive Components - Unit B H2S Recovery Unit	F_BH2S	6.6	2.00	213.3	65.0	147.6	45	0.0	393872.7	3751390.8	23.21
Fugitive Components - Boilers	F_BLRS	6.6	2.00	82.0	25.0	82.0	25	0.0	393990.6	3751315.6	23.47
Fugitive Components - Caustic Storage and Scrubbing	F_CAUSTC	6.6	2.00	82.0	25.0	180.4	55	0.0	393725.4	3751472.3	23.16
Fugitive Components - DMDS Unloading Rack	F_DMDS	6.6	2.00	65.6	20.0	49.2	15	0.0	393758.2	3751576.4	23.47
Fugitive Components - Fuel Gas System (1 of 2 - Unit A)	F_FGSYSA	6.6	2.00	164.0	50.0	164.0	50	0.0	393730.8	3751523.4	23.38
Fugitive Components - Fuel Gas System (2 of 2 - Unit B)	F_FGSYSB	6.6	2.00	164.0	50.0	164.0	50	0.0	393960.2	3751358.1	23.47
Fugitive Components - Flare Vapor Recovery System	F_FL_VRS	6.6	2.00	59.1	18.0	82.0	25	0.0	393609.7	3751546.3	23.16
Fugitive Components - Refinery Flare System	F_FLARES	6.6	2.00	59.1	18.0	39.4	12	0.0	393607.1	3751573.0	23.16
Fugitive Components - Hydrogen Reformer Heater	F_H2REF	6.6	2.00	29.5	9.0	29.5	9	0.0	393926.1	3751534.3	23.77
Fugitive Components - Incineration System	F_INCIN	6.6	2.00	32.8	10.0	49.2	15	0.0	393880.1	3751401.4	23.47
Fugitive Components - In-Line Gasoline Blending	F_INLN	6.6	2.00	72.2	22.0	16.4	5	0.0	393780.0	3751573.6	23.47
Fugitive Components - LPG Tank Truck Loading/Unloading Rack No. 22	F_LPG	6.6	2.00	82.0	25.0	49.2	15	0.0	393851.0	3751565.2	23.73
Fugitive Components - Lift Station Sump	F_LSS	6.6	2.00	32.8	10.0	49.2	15	0.0	393772.5	3751534.0	23.47
Fugitive Components - Naphtha Stabilization	F_NAPH	6.6	2.00	65.6	20.0	39.4	12	0.0	393759.8	3751545.1	23.47
Fugitive Components - New Flare System	F_NEW_FL	6.6	2.00	147.6	45.0	147.6	45	0.0	394016.6	3751452.5	23.77
Fugitive Components - New sour water stripper	F_NEWSWS	6.6	2.00	131.2	40.0	82.0	25	0.0	393889.0	3751396.9	23.47

Table B-7. Post-Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
Fugitive Components - New Flare Vapor Recovery System	F_NWFVRS	6.6	2.00	147.6	45.0	147.6	45	0.0	394016.6	3751452.5	23.77
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility	F_ORG	6.6	2.00	393.7	120.0	32.8	10	32.0	393857.9	3751381.9	23.16
Fugitive Components - Pipeline Flushing/Receiving Unit	F_PIPEFL	6.6	2.00	16.4	5.0	26.2	8	0.0	394158.7	3751516.3	24.38
Fugitive Components - Pretreat Unit Wastewater Treatment	F_PRE_WW	6.6	2.00	147.6	45.0	72.2	22	0.0	394034.5	3751347.4	23.47
Fugitive Components - Propane Recovery	F_PROPNE	6.6	2.00	196.9	60.0	32.8	10	0.0	393806.0	3751476.5	23.47
Fugitive Components - Tank Truck Unloading Rack No. 1 (1/1A)	F_R1_1A	6.6	2.00	82.0	25.0	49.2	15	0.0	394038.0	3751512.3	24.07
Fugitive Components - Tank Truck Unloading Rack No. 12 & 13	F_R12	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Loading Rack No. 18	F_R18	6.6	2.00	23.0	7.0	16.4	5.00	-60.0	394093.6	3751369.8	23.77
Fugitive Components - Tank Truck Loading Rack No. 19	F_R19	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Unloading Rack No. 2	F_R2	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Loading Rack No. 20	F_R20	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21	F_R21	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Gasoline Blendstock Tank Truck Unloading Rack No. 23	F_R23	6.6	2.00	164.0	50.0	213.3	65.00	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Loading Rack No. 6 (60/61)	F_R6	6.6	2.00	164.0	50.0	213.3	65	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Loading Rack No. 7 (70/71)	F_R7	6.6	2.00	164.0	50.0	213.3	65	0.0	394244.4	3751601.6	25.23
Fugitive Components - Tank Truck Loading Rack No. 8 (80/81)	F_R8	6.6	2.00	164.0	50.0	213.3	65	0.0	394244.4	3751601.6	25.23
Fugitive Components - Renewable Fuels Unit B	F_RF_B	6.6	2.00	164.0	50.0	164.0	50	0.0	393960.2	3751358.1	23.47

Table B-7. Post-Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
Fugitive Components - Renewable Fuels First Stage	F_RF1ST	6.6	2.00	98.4	30.0	196.9	60	0.0	393701.3	3751519.9	23.16
Fugitive Components - Renewable Fuels Second Stage	F_RF2ND	6.6	2.00	98.4	30.0	147.6	45	0.0	393768.9	3751520.4	23.47
Fugitive Components - SCR - Aqueous NH3 Transfer and Storage	F_SCR	6.6	2.00	49.2	15.0	23.0	7	0.0	393739.6	3751483.5	23.16
Fugitive Components - SOx Scrubbing System	F_SCRUB	6.6	2.00	26.2	8.0	19.7	6	0.0	393880.6	3751405.1	23.47
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility, SP 3	F_SP3	6.6	2.00	311.7	95.0	26.2	8	0.0	393796.3	3751438.6	23.16
Fugitive Components - Pretreatment clay oil recovery system	F_SPCLAY	6.6	2.00	49.2	15.0	82.0	25	0.0	393685.1	3751583.5	23.47
Fugitive Components - Spent Caustic Loading Rack	F_SPENT	6.6	2.00	65.6	20.0	32.8	10	0.0	393734.2	3751533.2	23.47
Fugitive Components - Soil Vapor Extraction Area 1	F_SVE1	5.0	1.52	557.7	170.0	492.1	150	0.0	393739.9	3751516.7	23.46
Fugitive Components - Soil Vapor Extraction System Area 234	F_SVE234	5.0	1.52	393.7	120.0	524.9	160	0.0	394103.2	3751508.5	24.08
Fugitive Components - Soil Vapor Extraction System Area 5	F_SVE5	5.0	1.52	492.1	150.0	492.1	150	0.0	393987.4	3751299.0	23.22
Fugitive Components - Units A & B Sour Water Stripper Unit	F_SWS	6.6	2.00	131.2	40.0	114.8	35	0.0	393874.4	3751395.9	23.31
Fugitive Components - Unit A SOx Control (P7S1-3) located at Sulfur Recovery Unit	F_UA_SOX	6.6	2.00	65.6	20.0	82.0	25	0.0	393731.6	3751493.7	23.16
Fugitive Components - Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21	F_VR	6.6	2.00	49.2	15.0	49.2	15	0.0	394196.6	3751642.0	24.99
Fugitive Components - New Vapor Recovery System (Spur 4 and Rack 18)	F_VR_NEW	6.6	2.00	55.8	17.0	114.8	35	0.0	393889.9	3751395.0	23.47
Fugitive Components - Wastewater Separation Fac (Crude Unit Area)	F_WW_CR	6.6	2.00	65.6	20.0	82.0	25	0.0	394005.5	3751425.1	23.77
Tank 1000 piping component fugitives	FUGT1000	6.6	2.00	42.0	12.8	42.0	12.8	0.0	393741.4	3751468.1	23.16
Tank farm TF-02 piping component fugitives	FUGTKFM2	6.6	2.00	98.4	30.0	344.5	105	0.0	394116.4	3751547.7	24.09
Tank farm TF-03 piping component fugitives	FUGTKFM3	6.6	2.00	65.6	20.0	98.4	30	0.0	393803.4	3751586.7	23.47

Table B-7. Post-Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(degrees)	(m)	(m)	(m)
Tank farm TF-04 piping component fugitives	FUGTKFM4	6.6	2.00	82.0	25.0	82.0	25	0.0	393948.4	3751551.7	23.77
Tank farm TF-05 piping component fugitives	FUGTKFM5	6.6	2.00	65.6	20.0	131.2	40	0.0	393978.4	3751563.7	23.77
Tank farm TF-07 piping component fugitives	FUGTKFM7	6.6	2.00	82.0	25.0	82.0	25	0.0	394055.4	3751405.7	23.77
Tank farm TF-09 piping component fugitives	FUGTKFM9	6.6	2.00	32.8	10.0	65.6	20	0.0	393641.4	3751552.7	23.16
Tank farm piping component fugitives	TKFUG	6.0	1.83	98.4	30.0	426.5	130	31.5	394131.0	3751374.3	24.01
Wastewater Treatment - New Pretreat WWT System	WW_NEW	6.6	2.00	65.6	20.0	82.0	25	0.0	394005.5	3751425.1	23.77
Union Pacific Rail Mover	UPRAIL	15.0	4.57	1063.3	324.1	35.7	10.9	31.2	393562.1	3751546.9	23.16

Table B-8. Post-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
Tank 100001	T100001	56.0	17.1	56.5	17.2	394100.9	3751317.3	23.77
Tank 100002	T100002	56.0	17.1	56.5	17.2	394141.4	3751324.1	23.77
Tank 10001	T10001	40.2	12.2	21.3	6.5	393637.2	3751551.7	23.16
Tank 10005	T10005	24.4	7.4	27.0	8.2	394002.2	3751534.8	23.77
Tank 10006	T10006	24.5	7.5	27.0	8.2	394002.8	3751554.7	24.04
Tank 10007	T10007	24.3	7.4	27.0	8.2	394003.8	3751574.8	24.08
Tank 10008	T10008	49.3	15.0	19.5	5.9	394133.6	3751526.7	24.22
Tank 10009	T10009	40.2	12.2	21.1	6.4	393637.2	3751567.2	23.16
Tank 1012	T1012	15.7	4.8	10.8	3.3	393789.2	3751487.6	23.47
Tank 1013	T1013	15.7	4.8	10.8	3.3	393789.2	3751479.4	23.47
Tank 12501	T12501	40.9	12.5	24.0	7.3	393966.7	3751538.5	23.77
Tank 12502	T12502	40.9	12.5	24.0	7.3	393966.2	3751569.2	23.77
Tank 20003	T20003	39.9	12.2	30.0	9.1	394003.9	3751607.7	24.08
Tank 20004	T20004	40.0	12.2	30.0	9.1	394003.9	3751637.4	24.08
Tank 20005	T20005	40.1	12.2	30.0	9.1	393972.7	3751641.1	24.08
Tank 2014	T2014	16.0	4.9	14.8	4.5	394044.6	3751420.2	23.77
Tank 242	T242	15.0	4.6	5.2	1.6	393790.5	3751464.4	23.39
Tank 25001	T25001	50.0	15.2	30.0	9.1	393801.1	3751638.2	23.77
Tank 25002	T25002	50.0	15.2	30.0	9.1	393825.4	3751638.2	23.77
Tank 25003	T25003	50.0	15.2	30.0	9.1	393825.3	3751613.7	23.77
Tank 25004	T25004	49.6	15.1	30.0	9.1	393825.5	3751589.1	23.69
Tank 25005	T25005	50.0	15.2	30.0	9.1	394133.7	3751603.0	24.38
Tank 25006	T25006	50.0	15.2	30.0	9.1	394133.7	3751575.8	24.38
Tank 25007	T25007	48.0	14.6	30.0	9.1	394133.7	3751548.2	24.38
Tank 25008	T25008	50.0	15.2	30.0	9.1	394176.5	3751638.3	24.72
Tank 25009	T25009	50.0	15.2	30.0	9.1	394109.3	3751562.2	24.24
Tank 3001	T3001	23.1	7.0	14.8	4.5	394057.2	3751391.4	23.77
Tank 50001	T50001	49.8	15.2	43.0	13.1	394133.5	3751636.5	24.52
Tank 50002	T50002	50.3	15.3	43.0	13.1	394181.4	3751602.7	24.69
Tank 50003	T50003	47.7	14.5	45.0	13.7	394106.2	3751529.3	24.08

Table B-8. Post-Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
Tank 50004	T50004	47.7	14.5	45.0	13.7	393795.7	3751608.2	23.69
Tank 50008	T50008	47.7	14.6	43.0	13.1	394178.4	3751381.6	24.08
Tank 518	T518	20.0	6.1	6.0	1.8	394148.9	3751515.9	24.38
Tank 6001	T6001	39.2	12.0	15.9	4.8	394079.3	3751392.1	23.77
Tank 6002	T6002	39.7	12.1	15.9	4.8	394091.0	3751392.3	23.77
Tank 35001	T35001	40.1	12.2	45.0	13.7	393970.7	3751612.9	24.06

Table B-9. Post-Project AREAPOLY Source Parameters

Source Description	Model ID	Release Height (ft)	Release Height (m)	Number of Vertices	Base Elevation (m)	UTM Coordinates Easting/ Northing (m)	(m)
Wastewater Treatment - Existing WWT System	WW_EXIST	5.0	1.5	4	23.16	393619.1	3751541.8
						393619.3	3751579.3
						393661.6	3751579.3
						393661.9	3751513.8
Fugitive Components - Unit B Amine	F_BAMINE	5.0	1.5	4	23.47	393852.0	3751431.7
						393894.9	3751430.4
						393894.9	3751387.5
						393851.8	3751414.3
Fugitive Components - Wastewater Separation Fac (Hydroprocessing Area)	F_WW_HYD	5.0	1.5	4	23.16	393619.1	3751541.8
						393619.3	3751579.3
						393661.6	3751579.3
						393661.9	3751513.8
Fugitive Components - Hydrogen Generation Unit	F_H2GEN	5.0	1.5	6	23.47	393814.5	3751482.8
						393935.8	3751481.1
						393934.4	3751556.3
						393845.8	3751557.7
						393845.8	3751509.9
						393813.7	3751510.2

Table B-10. Post-Project VOLUME Source Parameters

Source Description	Model ID	Release Height		Init. Horizontal Dimension		Init. Vertical Dimension		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
Fugitive Components - Pretreat Unit	F_PRE	25.0	7.62	30.5	9.3	23.3	7.1	394111.8	3751469.5	24.08
Cooling tower Y-500/501	CT500	9.5	2.90	11.4	3.5	8.8	2.69358	393780.0	3751526.0	23.47
Cooling tower Y-800/801/802	CT800	7.0	2.13	11.4	3.5	6.5	1.98474	394045.0	3751333.0	23.47
Hydrogen plant venting	H2VENT	10.0	3.05	6.9	2.1	9.3	2.83	393930.3	3751539.0	23.77
Onsite trucks	TRK_001-247	8.4	2.55	13.7	4.2	7.8	2.37	See modeling files		

EXHIBIT C. EMISSION RATES

Table C-1. Pre-Project Emission Rates by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
83-32-9	Acenaphthene	8.65E-03	1.24E-07	1.49E-06	1.88E-07
208-96-8	Acenaphthylene	6.74E-03	9.69E-08	1.16E-06	1.46E-07
75-07-0	Acetaldehyde	2.19E+01	3.15E-04	3.77E-03	4.75E-04
107-02-8	Acrolein	3.28E+00	4.72E-05	5.61E-04	7.07E-05
7664-41-7	Ammonia	5.21E+03	7.49E-02	8.91E-01	1.12E-01
120-12-7	Anthracene	1.58E-02	2.27E-07	2.70E-06	3.40E-07
71-43-2	Benzene	2.40E+02	3.45E-03	2.87E-02	3.62E-03
56-55-3	Benzo(a)anthracene	1.09E-02	1.57E-07	1.85E-06	2.33E-07
50-32-8	Benzo(a)pyrene	6.47E-03	9.30E-08	1.11E-06	1.40E-07
205-99-2	Benzo(b)fluoranthene	5.73E-03	8.24E-08	9.61E-07	1.21E-07
192-97-2	Benzo(e)pyrene	2.41E-04	3.46E-09	4.16E-08	5.24E-09
191-24-2	Benzo(g,h,i)perylene	6.22E-03	8.94E-08	1.07E-06	1.35E-07
207-08-9	Benzo(k)fluoranthene	5.72E-03	8.22E-08	9.52E-07	1.20E-07
106-99-0	1,3-Butadiene	1.94E-01	2.79E-06	3.36E-05	4.23E-06
7440-43-9	Cadmium	4.23E-01	6.08E-06	7.33E-05	9.23E-06
18540-29-9	Chromium (VI)	1.25E-01	1.80E-06	2.11E-05	2.66E-06
218-01-9	Chrysene	1.18E-02	1.70E-07	2.02E-06	2.55E-07
7440-50-8	Copper	1.69E+00	2.43E-05	2.94E-04	3.70E-05
53-70-3	Dibenzo(a,h)anthracene	1.06E-02	1.52E-07	1.82E-06	2.30E-07
9901	Diesel Exhaust Particulate	6.18E+01	8.89E-04	4.67E-02	5.88E-03
57-97-6	7,12-Dimethylbenz(a)anthracene	2.16E-03	3.11E-08	3.55E-07	4.47E-08
100-41-4	Ethyl Benzene	8.27E+01	1.19E-03	1.03E-02	1.30E-03
206-44-0	Fluoranthene	1.95E-02	2.80E-07	3.37E-06	4.25E-07
86-73-7	Fluorene	2.60E-02	3.74E-07	4.49E-06	5.66E-07
50-00-0	Formaldehyde	4.18E+02	6.00E-03	7.23E-02	9.11E-03
110-54-3	Hexane	8.69E+02	1.25E-02	9.93E-02	1.25E-02
7783-06-4	Hydrogen Sulfide	6.87E+01	9.87E-04	7.84E-03	9.88E-04
193-39-5	Indeno(1,2,3-c,d)pyrene	1.06E-02	1.53E-07	1.84E-06	2.32E-07
7439-96-5	Manganese	3.38E+00	4.86E-05	5.87E-04	7.39E-05
7439-97-6	Mercury	2.11E-01	3.04E-06	3.67E-05	4.62E-06
67-56-1	Methanol	7.46E-01	1.07E-05	8.52E-05	1.07E-05
56-49-5	3-Methylcholanthrene	2.43E-04	3.49E-09	4.00E-08	5.04E-09
91-57-6	2-Methylnaphthalene	5.58E-03	8.02E-08	9.38E-07	1.18E-07
91-20-3	Naphthalene	2.19E+00	3.14E-05	2.86E-04	3.60E-05
7440-02-0	Nickel	4.15E-01	5.97E-06	7.19E-05	9.06E-06
1151	PAHs	2.08E+00	2.98E-05	3.66E-04	4.61E-05

Table C-1. Pre-Project Emission Rates by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
198-55-0	Perylene	3.10E-04	4.45E-09	5.36E-08	6.75E-09
85-01-8	Phenanthrene	1.41E-01	2.02E-06	2.43E-05	3.06E-06
75-56-9	Propylene Oxide	1.31E+01	1.88E-04	2.26E-03	2.85E-04
129-00-0	Pyrene	1.29E-02	1.86E-07	2.23E-06	2.81E-07
108-88-3	Toluene	2.90E+02	4.17E-03	3.69E-02	4.66E-03
95-63-6	1,2,4-Trimethylbenzene	1.11E+01	1.60E-04	1.27E-03	1.60E-04
1330-20-7	Xylenes	2.72E+02	3.91E-03	3.29E-02	4.15E-03

Table C-2. Post-Project Potential-to-Emit by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
95-63-6	1,2,4-Trimethylbenzene	1.93E+03	2.77E-02	2.21E-01	2.79E-02
95-50-1	1,2-Dichlorobenzene	1.42E+01	2.04E-04	1.62E-03	2.04E-04
540-84-1	2,2,4-Trimethylpentane	3.06E+03	4.40E-02	3.75E-01	4.72E-02
91-57-6	2-Methylnaphthalene	2.04E-01	2.94E-06	2.27E-05	2.87E-06
56-49-5	3-Methylchloranthrene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
57-97-6	7,12-Dimethylbenz(a)anthracene	1.36E-01	1.96E-06	1.52E-05	1.91E-06
83-32-9	Acenaphthene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
208-96-8	Acenaphthylene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
75-07-0	Acetaldehyde	1.53E+01	2.20E-04	1.66E-03	2.09E-04
107-02-8	Acrolein	1.32E+01	1.90E-04	1.44E-03	1.82E-04
7664-41-7	Ammonia	2.56E+04	3.68E-01	2.87E+00	3.62E-01
120-12-7	Anthracene	2.04E-02	2.94E-07	2.27E-06	2.87E-07
71-43-2	Benzene	5.49E+02	7.90E-03	6.73E-02	8.48E-03
56-55-3	Benzo(a)anthracene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
50-32-8	Benzo(a)pyrene	1.02E-02	1.47E-07	1.14E-06	1.43E-07
205-99-2	Benzo(b)fluoranthene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
191-24-2	Benzo(g,h,i)perylene	1.02E-02	1.47E-07	1.14E-06	1.43E-07
207-08-9	Benzo(k)fluoranthene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
218-01-9	Chrysene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
110-82-7	Cyclohexane	3.60E+03	5.18E-02	4.17E-01	5.25E-02
53-70-3	Dibenzo(a,h)anthracene	1.02E-02	1.47E-07	1.14E-06	1.43E-07
9901	Diesel engine exhaust, particulate matter	2.72E+01	3.91E-04	4.06E-02	5.12E-03
100-41-4	Ethylbenzene	5.88E+02	8.46E-03	6.78E-02	8.54E-03
74-85-1	Ethylene	1.82E+02	2.62E-03	2.08E-02	2.62E-03
206-44-0	Fluoranthene	2.55E-02	3.67E-07	2.84E-06	3.58E-07
86-73-7	Fluorene	2.38E-02	3.43E-07	2.66E-06	3.35E-07
50-00-0	Formaldehyde	6.08E+01	8.75E-04	6.61E-03	8.33E-04
7647-01-0	Hydrogen Chloride	6.85E+00	9.85E-05	7.82E-04	9.85E-05
7783-06-4	Hydrogen Sulfide	1.54E+03	2.21E-02	1.76E-01	2.22E-02
193-39-5	Indeno(1,2,3-cd)pyrene	1.53E-02	2.20E-07	1.71E-06	2.15E-07
78-79-5	Isoprene	4.47E+02	6.43E-03	5.15E-02	6.49E-03
98-82-8	Isopropyl benzene	6.75E+01	9.71E-04	7.78E-03	9.80E-04
67-56-1	Methanol	3.23E+03	4.65E-02	3.69E-01	4.65E-02
91-20-3	Naphthalene	9.60E+01	1.38E-03	1.10E-02	1.38E-03
110-54-3	n-Hexane	1.74E+04	2.50E-01	2.02E+00	2.54E-01
85-01-8	Phenanthrene	1.45E-01	2.08E-06	1.61E-05	2.03E-06
115-07-1	Propylene	2.18E+03	3.13E-02	2.34E-01	2.95E-02
129-00-0	Pyrene	4.26E-02	6.12E-07	4.74E-06	5.97E-07
7664-93-9	Sulfuric Acid	1.37E+04	1.97E-01	1.56E+00	1.96E-01

Table C-2. Post-Project Potential-to-Emit by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
1175	Silica, crystalline (respirable)	1.81E+01	2.60E-04	2.06E-03	2.60E-04
108-88-3	Toluene	1.34E+03	1.93E-02	1.57E-01	1.98E-02
1330-20-7	Xylenes	3.91E+03	5.63E-02	4.53E-01	5.70E-02

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
1	5HDS PENEX unit	Benzene	71-43-2	2.42E+00	3.49E-05	2.77E-04	3.49E-05
		Naphthalene	91-20-3	1.92E-04	2.76E-09	2.19E-08	2.76E-09
		1,2,4-Trimethylbenzene	95-63-6	2.95E-02	4.25E-07	3.37E-06	4.25E-07
		Ethyl Benzene	100-41-4	4.28E-02	6.15E-07	4.89E-06	6.16E-07
		Toluene	108-88-3	1.33E+00	1.92E-05	1.52E-04	1.92E-05
		Hexane	110-54-3	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes	1330-20-7	1.14E-01	1.63E-06	1.30E-05	1.64E-06
2	D374	PAHs	1151	1.28E-01	1.84E-06	0.00E+00	0.00E+00
		Formaldehyde	50-00-0	5.61E+00	8.07E-05	0.00E+00	0.00E+00
		Benzene	71-43-2	9.69E-01	1.39E-05	0.00E+00	0.00E+00
		Acetaldehyde	75-07-0	2.38E-01	3.42E-06	0.00E+00	0.00E+00
		Toluene	108-88-3	1.15E-01	1.66E-06	0.00E+00	0.00E+00
		Manganese	7439-96-5	1.46E-01	2.10E-06	0.00E+00	0.00E+00
		Mercury	7439-97-6	9.10E-03	1.31E-07	0.00E+00	0.00E+00
		Nickel	7440-02-0	1.83E-02	2.63E-07	0.00E+00	0.00E+00
		Cadmium	7440-43-9	1.83E-02	2.63E-07	0.00E+00	0.00E+00
		Copper	7440-50-8	7.32E-02	1.05E-06	0.00E+00	0.00E+00
		Chromium (VI)	18540-29-9	4.60E-03	6.61E-08	0.00E+00	0.00E+00
3	D375	PAHs	1151	2.79E-02	4.01E-07	1.48E-05	1.86E-06
		Formaldehyde	50-00-0	1.22E+00	1.76E-05	6.47E-04	8.15E-05
		Benzene	71-43-2	2.11E-01	3.03E-06	1.12E-04	1.41E-05
		Acetaldehyde	75-07-0	5.18E-02	7.45E-07	2.74E-05	3.45E-06
		Toluene	108-88-3	2.51E-02	3.61E-07	1.33E-05	1.68E-06
		Manganese	7439-96-5	3.19E-02	4.59E-07	1.69E-05	2.13E-06
		Mercury	7439-97-6	2.00E-03	2.87E-08	1.05E-06	1.32E-07
		Nickel	7440-02-0	4.00E-03	5.75E-08	2.11E-06	2.66E-07
		Cadmium	7440-43-9	4.00E-03	5.75E-08	2.11E-06	2.66E-07
		Copper	7440-50-8	1.59E-02	2.29E-07	8.43E-06	1.06E-06
		Chromium (VI)	18540-29-9	1.00E-03	1.44E-08	5.27E-07	6.64E-08
4	D376	PAHs	1151	8.93E-02	1.28E-06	0.00E+00	0.00E+00
		Formaldehyde	50-00-0	3.91E+00	5.63E-05	0.00E+00	0.00E+00

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	6.76E-01	9.71E-06	0.00E+00	0.00E+00
		Acetaldehyde	75-07-0	1.66E-01	2.38E-06	0.00E+00	0.00E+00
		Toluene	108-88-3	8.03E-02	1.15E-06	0.00E+00	0.00E+00
		Manganese	7439-96-5	1.02E-01	1.47E-06	0.00E+00	0.00E+00
		Mercury	7439-97-6	6.40E-03	9.20E-08	0.00E+00	0.00E+00
		Nickel	7440-02-0	1.28E-02	1.84E-07	0.00E+00	0.00E+00
		Cadmium	7440-43-9	1.28E-02	1.84E-07	0.00E+00	0.00E+00
		Copper	7440-50-8	5.10E-02	7.33E-07	0.00E+00	0.00E+00
		Chromium (VI)	18540-29-9	3.20E-03	4.60E-08	0.00E+00	0.00E+00
5	Ben Sat Unit Fugitives	Benzene	71-43-2	2.42E+00	3.49E-05	2.77E-04	3.49E-05
		Naphthalene	91-20-3	1.92E-04	2.76E-09	2.19E-08	2.76E-09
		1,2,4-Trimethylbenzene	95-63-6	2.95E-02	4.25E-07	3.37E-06	4.25E-07
		Ethyl Benzene	100-41-4	4.28E-02	6.15E-07	4.89E-06	6.16E-07
		Toluene	108-88-3	1.33E+00	1.92E-05	1.52E-04	1.92E-05
		Hexane	110-54-3	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes	1330-20-7	1.14E-01	1.63E-06	1.30E-05	1.64E-06
6	Cogen	Formaldehyde	50-00-0	3.22E+02	4.62E-03	5.56E-02	7.01E-03
		Benzo(a)pyrene	50-32-8	6.29E-03	9.05E-08	1.09E-06	1.37E-07
		Dibenzo(a,h)anthracene	53-70-3	1.05E-02	1.51E-07	1.82E-06	2.29E-07
		3-Methylcholanthrene	56-49-5	2.20E-04	3.16E-09	3.73E-08	4.70E-09
		Benzo(a)anthracene	56-55-3	1.02E-02	1.47E-07	1.77E-06	2.23E-07
		7,12-Dimethylbenz(a)anthracene	57-97-6	1.95E-03	2.81E-08	3.31E-07	4.17E-08
		Benzene	71-43-2	6.10E+00	8.77E-05	1.05E-03	1.32E-04
		Acetaldehyde	75-07-0	1.84E+01	2.65E-04	3.19E-03	4.02E-04
		Propylene Oxide	75-56-9	1.31E+01	1.88E-04	2.26E-03	2.85E-04
		Acenaphthene	83-32-9	8.62E-03	1.24E-07	1.49E-06	1.88E-07
		Phenanthrene	85-01-8	1.41E-01	2.02E-06	2.43E-05	3.06E-06
		Fluorene	86-73-7	2.60E-02	3.74E-07	4.49E-06	5.66E-07
		Naphthalene	91-20-3	6.25E-01	8.98E-06	1.08E-04	1.36E-05
		2-Methylnaphthalene	91-57-6	5.27E-03	7.58E-08	9.02E-07	1.14E-07
		Ethyl Benzene	100-41-4	1.53E+01	2.19E-04	2.64E-03	3.32E-04

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		1,3-Butadiene	106-99-0	1.94E-01	2.79E-06	3.36E-05	4.23E-06
		Acrolein	107-02-8	3.22E+00	4.63E-05	5.55E-04	7.00E-05
		Toluene	108-88-3	6.21E+01	8.92E-04	1.07E-02	1.35E-03
		Hexane	110-54-3	5.62E-01	8.08E-06	9.53E-05	1.20E-05
		Anthracene	120-12-7	1.52E-02	2.19E-07	2.64E-06	3.33E-07
		Pyrene	129-00-0	1.29E-02	1.85E-07	2.22E-06	2.80E-07
		Benzo(g,h,i)perylene	191-24-2	6.21E-03	8.92E-08	1.07E-06	1.35E-07
		Benzo(e)pyrene	192-97-2	2.41E-04	3.46E-09	4.16E-08	5.24E-09
		Indeno(1,2,3-c,d)pyrene	193-39-5	1.06E-02	1.53E-07	1.84E-06	2.32E-07
		Perylene	198-55-0	3.10E-04	4.45E-09	5.36E-08	6.75E-09
		Benzo(b)fluoranthene	205-99-2	5.22E-03	7.50E-08	9.02E-07	1.14E-07
		Fluoranthene	206-44-0	1.95E-02	2.80E-07	3.37E-06	4.25E-07
		Benzo(k)fluoranthene	207-08-9	5.08E-03	7.31E-08	8.79E-07	1.11E-07
		Acenaphthylene	208-96-8	6.72E-03	9.66E-08	1.16E-06	1.46E-07
		Chrysene	218-01-9	1.14E-02	1.63E-07	1.97E-06	2.48E-07
		Xylenes	1330-20-7	3.13E+01	4.50E-04	5.40E-03	6.81E-04
		Manganese	7439-96-5	9.03E-01	1.30E-05	1.56E-04	1.97E-05
		Mercury	7439-97-6	5.64E-02	8.11E-07	9.72E-06	1.22E-06
		Nickel	7440-02-0	1.13E-01	1.62E-06	1.94E-05	2.44E-06
		Cadmium	7440-43-9	1.13E-01	1.62E-06	1.94E-05	2.44E-06
		Copper	7440-50-8	4.52E-01	6.49E-06	7.78E-05	9.80E-06
		Ammonia	7664-41-7	5.14E+03	7.38E-02	8.85E-01	1.11E-01
		Chromium (VI)	18540-29-9	2.82E-02	4.05E-07	4.86E-06	6.12E-07
7	Asphalt Fugitives	PAHs	1151	8.63E-05	1.24E-09	9.85E-09	1.24E-09
		Formaldehyde	50-00-0	7.98E-08	1.15E-12	9.11E-12	1.15E-12
		Benzo(a)pyrene	50-32-8	3.78E-05	5.43E-10	4.32E-09	5.44E-10
		Dibenzo(a,h)anthracene	53-70-3	5.14E-06	7.39E-11	5.87E-10	7.40E-11
		Benzo(a)anthracene	56-55-3	1.55E-04	2.23E-09	1.77E-08	2.23E-09
		Benzene	71-43-2	5.01E+00	7.20E-05	5.72E-04	7.21E-05
		Acetaldehyde	75-07-0	3.76E-06	5.40E-11	4.29E-10	5.41E-11
		Naphthalene	91-20-3	3.09E-02	4.44E-07	3.53E-06	4.45E-07

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		1,2,4-Trimethylbenzene	95-63-6	2.45E+00	3.52E-05	2.79E-04	3.52E-05
		Ethyl Benzene	100-41-4	4.51E-01	6.49E-06	5.15E-05	6.49E-06
		Acrolein	107-02-8	1.10E-06	1.58E-11	1.26E-10	1.59E-11
		Toluene	108-88-3	4.27E+00	6.14E-05	4.88E-04	6.15E-05
		Hexane	110-54-3	2.17E+01	3.12E-04	2.48E-03	3.13E-04
		Anthracene	120-12-7	1.09E-04	1.57E-09	1.25E-08	1.57E-09
		Benzo(b)fluoranthene	205-99-2	1.16E-04	1.67E-09	1.33E-08	1.68E-09
		Benzo(k)fluoranthene	207-08-9	1.46E-04	2.10E-09	1.66E-08	2.09E-09
		Chrysene	218-01-9	1.07E-04	1.53E-09	1.22E-08	1.54E-09
		Xylenes	1330-20-7	1.80E+00	2.58E-05	2.05E-04	2.59E-05
8	Crude Fugitives1	PAHs	1151	2.81E-05	4.04E-10	3.21E-09	4.04E-10
		Formaldehyde	50-00-0	2.60E-08	3.74E-13	2.97E-12	3.74E-13
		Benzo(a)pyrene	50-32-8	1.23E-05	1.77E-10	1.41E-09	1.78E-10
		Dibenzo(a,h)anthracene	53-70-3	1.67E-06	2.40E-11	1.91E-10	2.41E-11
		Benzo(a)anthracene	56-55-3	5.06E-05	7.27E-10	5.77E-09	7.27E-10
		Benzene	71-43-2	7.09E+00	1.02E-04	8.09E-04	1.02E-04
		Acetaldehyde	75-07-0	1.22E-06	1.75E-11	1.40E-10	1.76E-11
		Naphthalene	91-20-3	1.05E-02	1.51E-07	1.20E-06	1.51E-07
		1,2,4-Trimethylbenzene	95-63-6	8.63E-01	1.24E-05	9.85E-05	1.24E-05
		Ethyl Benzene	100-41-4	2.43E-01	3.50E-06	2.78E-05	3.50E-06
		Acrolein	107-02-8	3.59E-07	5.16E-12	4.09E-11	5.15E-12
		Toluene	108-88-3	4.39E+00	6.32E-05	5.02E-04	6.32E-05
		Hexane	110-54-3	4.65E+01	6.68E-04	5.31E-03	6.69E-04
		Anthracene	120-12-7	3.55E-05	5.10E-10	4.05E-09	5.10E-10
		Benzo(b)fluoranthene	205-99-2	3.79E-05	5.45E-10	4.32E-09	5.44E-10
		Benzo(k)fluoranthene	207-08-9	4.74E-05	6.81E-10	5.42E-09	6.83E-10
		Chrysene	218-01-9	3.47E-05	4.99E-10	3.96E-09	4.99E-10
		Xylenes	1330-20-7	8.41E-01	1.21E-05	9.60E-05	1.21E-05
9	Crude Fugitives2	PAHs	1151	2.81E-05	4.04E-10	3.21E-09	4.04E-10
		Formaldehyde	50-00-0	2.60E-08	3.74E-13	2.97E-12	3.74E-13
		Benzo(a)pyrene	50-32-8	1.23E-05	1.77E-10	1.41E-09	1.78E-10

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Dibenzo(a,h)anthracene	53-70-3	1.67E-06	2.40E-11	1.91E-10	2.41E-11
		Benzo(a)anthracene	56-55-3	5.06E-05	7.27E-10	5.77E-09	7.27E-10
		Benzene	71-43-2	7.09E+00	1.02E-04	8.09E-04	1.02E-04
		Acetaldehyde	75-07-0	1.22E-06	1.75E-11	1.40E-10	1.76E-11
		Naphthalene	91-20-3	1.05E-02	1.51E-07	1.20E-06	1.51E-07
		1,2,4-Trimethylbenzene	95-63-6	8.63E-01	1.24E-05	9.85E-05	1.24E-05
		Ethyl Benzene	100-41-4	2.43E-01	3.50E-06	2.78E-05	3.50E-06
		Acrolein	107-02-8	3.59E-07	5.16E-12	4.09E-11	5.15E-12
		Toluene	108-88-3	4.39E+00	6.32E-05	5.02E-04	6.32E-05
		Hexane	110-54-3	4.65E+01	6.68E-04	5.31E-03	6.69E-04
		Anthracene	120-12-7	3.55E-05	5.10E-10	4.05E-09	5.10E-10
		Benzo(b)fluoranthene	205-99-2	3.79E-05	5.45E-10	4.32E-09	5.44E-10
		Benzo(k)fluoranthene	207-08-9	4.74E-05	6.81E-10	5.42E-09	6.83E-10
		Chrysene	218-01-9	3.47E-05	4.99E-10	3.96E-09	4.99E-10
		Xylenes	1330-20-7	8.41E-01	1.21E-05	9.60E-05	1.21E-05
10	HDS Fugitives	PAHs	1151	7.35E-05	1.06E-09	8.39E-09	1.06E-09
		Formaldehyde	50-00-0	6.80E-08	9.77E-13	7.76E-12	9.78E-13
		Benzo(a)pyrene	50-32-8	3.22E-05	4.63E-10	3.68E-09	4.64E-10
		Dibenzo(a,h)anthracene	53-70-3	4.38E-06	6.30E-11	5.00E-10	6.30E-11
		Benzo(a)anthracene	56-55-3	1.32E-04	1.90E-09	1.51E-08	1.90E-09
		Benzene	71-43-2	3.37E+01	4.84E-04	3.85E-03	4.85E-04
		Acetaldehyde	75-07-0	3.20E-06	4.60E-11	3.66E-10	4.61E-11
		Naphthalene	91-20-3	2.86E-02	4.11E-07	3.27E-06	4.12E-07
		1,2,4-Trimethylbenzene	95-63-6	2.44E+00	3.51E-05	2.79E-04	3.51E-05
		Ethyl Benzene	100-41-4	9.04E-01	1.30E-05	1.03E-04	1.30E-05
		Acrolein	107-02-8	9.39E-07	1.35E-11	1.07E-10	1.35E-11
		Toluene	108-88-3	1.98E+01	2.85E-04	2.26E-03	2.85E-04
		Hexane	110-54-3	2.31E+02	3.32E-03	2.64E-02	3.33E-03
		Anthracene	120-12-7	9.30E-05	1.34E-09	1.06E-08	1.34E-09
		Benzo(b)fluoranthene	205-99-2	9.91E-05	1.42E-09	1.13E-08	1.42E-09
		Benzo(k)fluoranthene	207-08-9	1.24E-04	1.78E-09	1.42E-08	1.79E-09

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Chrysene	218-01-9	9.08E-05	1.31E-09	1.04E-08	1.31E-09
		Xylenes	1330-20-7	2.91E+00	4.18E-05	3.32E-04	4.18E-05
11	Jet Fugitives	PAHs	1151	2.81E-05	4.04E-10	3.21E-09	4.04E-10
		Formaldehyde	50-00-0	2.60E-08	3.74E-13	2.97E-12	3.74E-13
		Benzo(a)pyrene	50-32-8	1.23E-05	1.77E-10	1.41E-09	1.78E-10
		Dibenzo(a,h)anthracene	53-70-3	1.67E-06	2.40E-11	1.91E-10	2.41E-11
		Benzo(a)anthracene	56-55-3	5.06E-05	7.27E-10	5.77E-09	7.27E-10
		Benzene	71-43-2	7.09E+00	1.02E-04	8.09E-04	1.02E-04
		Acetaldehyde	75-07-0	1.22E-06	1.75E-11	1.40E-10	1.76E-11
		Naphthalene	91-20-3	1.05E-02	1.51E-07	1.20E-06	1.51E-07
		1,2,4-Trimethylbenzene	95-63-6	8.63E-01	1.24E-05	9.85E-05	1.24E-05
		Ethyl Benzene	100-41-4	2.43E-01	3.50E-06	2.78E-05	3.50E-06
		Acrolein	107-02-8	3.59E-07	5.16E-12	4.09E-11	5.15E-12
		Toluene	108-88-3	4.39E+00	6.32E-05	5.02E-04	6.32E-05
		Hexane	110-54-3	4.65E+01	6.68E-04	5.31E-03	6.69E-04
		Anthracene	120-12-7	3.55E-05	5.10E-10	4.05E-09	5.10E-10
		Benzo(b)fluoranthene	205-99-2	3.79E-05	5.45E-10	4.32E-09	5.44E-10
		Benzo(k)fluoranthene	207-08-9	4.74E-05	6.81E-10	5.42E-09	6.83E-10
		Chrysene	218-01-9	3.47E-05	4.99E-10	3.96E-09	4.99E-10
		Xylenes	1330-20-7	8.41E-01	1.21E-05	9.60E-05	1.21E-05
12	TF-00-101 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
13	TF-02 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
14	TF-03 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
15	TF-04 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
16	TF-05 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
17	TK-07 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
18	TF-08 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
19	TF-09 Fugitives	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.42E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Ethyl Benzene	100-41-4	6.00E-02	8.63E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.04E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.30E-06	2.62E-05	3.30E-06
20	Gasoline Blender Fugitives	Benzene	71-43-2	2.42E+00	3.49E-05	2.77E-04	3.49E-05
		Naphthalene	91-20-3	1.92E-04	2.76E-09	2.19E-08	2.76E-09
		1,2,4-Trimethylbenzene	95-63-6	2.95E-02	4.25E-07	3.37E-06	4.25E-07
		Ethyl Benzene	100-41-4	4.28E-02	6.15E-07	4.89E-06	6.16E-07
		Toluene	108-88-3	1.33E+00	1.92E-05	1.52E-04	1.92E-05
		Hexane	110-54-3	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes	1330-20-7	1.14E-01	1.63E-06	1.30E-05	1.64E-06
21	Heater 101	PAHs	1151	8.11E-02	1.17E-06	1.29E-05	1.63E-06
		Formaldehyde	50-00-0	3.56E+00	5.11E-05	5.65E-04	7.12E-05
		Benzene	71-43-2	6.14E-01	8.83E-06	9.76E-05	1.23E-05
		Acetaldehyde	75-07-0	1.51E-01	2.17E-06	2.39E-05	3.01E-06
		Toluene	108-88-3	7.30E-01	1.05E-05	1.16E-04	1.46E-05
		Manganese	7439-96-5	9.27E-02	1.33E-06	1.47E-05	1.85E-06
		Mercury	7439-97-6	5.80E-03	8.34E-08	9.21E-07	1.16E-07
		Nickel	7440-02-0	1.16E-02	1.67E-07	1.84E-06	2.32E-07
		Cadmium	7440-43-9	1.16E-02	1.67E-07	1.84E-06	2.32E-07
		Copper	7440-50-8	4.64E-02	6.67E-07	7.37E-06	9.29E-07
		Chromium (VI)	18540-29-9	2.90E-03	4.17E-08	4.60E-07	5.80E-08
22	Heater 102	PAHs	1151	1.16E-01	1.67E-06	2.29E-05	2.89E-06
		Formaldehyde	50-00-0	5.08E+00	7.30E-05	1.01E-03	1.27E-04
		Benzene	71-43-2	8.77E-01	1.26E-05	1.74E-04	2.19E-05
		Acetaldehyde	75-07-0	2.15E-01	3.09E-06	4.26E-05	5.37E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	1.04E+00	1.50E-05	2.06E-04	2.60E-05
		Manganese	7439-96-5	1.32E-01	1.90E-06	2.62E-05	3.30E-06
		Mercury	7439-97-6	8.30E-03	1.19E-07	1.64E-06	2.07E-07
		Nickel	7440-02-0	1.66E-02	2.39E-07	3.28E-06	4.13E-07
		Cadmium	7440-43-9	1.66E-02	2.39E-07	3.28E-06	4.13E-07
		Copper	7440-50-8	6.62E-02	9.52E-07	1.31E-05	1.65E-06
		Chromium (VI)	18540-29-9	4.10E-03	5.89E-08	8.19E-07	1.03E-07
23	Heater 301	PAHs	1151	3.37E-02	4.84E-07	5.66E-06	7.13E-07
		Formaldehyde	50-00-0	1.48E+00	2.12E-05	2.48E-04	3.12E-05
		Benzene	71-43-2	2.55E-01	3.67E-06	4.28E-05	5.39E-06
		Acetaldehyde	75-07-0	6.26E-02	9.00E-07	1.05E-05	1.32E-06
		Toluene	108-88-3	3.03E-01	4.36E-06	5.09E-05	6.41E-06
		Manganese	7439-96-5	3.85E-02	5.53E-07	6.47E-06	8.15E-07
		Mercury	7439-97-6	2.40E-03	3.45E-08	4.04E-07	5.09E-08
		Nickel	7440-02-0	4.80E-03	6.90E-08	8.08E-07	1.02E-07
		Cadmium	7440-43-9	4.80E-03	6.90E-08	8.08E-07	1.02E-07
		Copper	7440-50-8	1.93E-02	2.77E-07	3.23E-06	4.07E-07
		Hydrogen Sulfide	7783-06-4	1.44E-02	2.07E-07	2.43E-06	3.06E-07
24	Heater 302	PAHs	1151	8.14E-02	1.17E-06	1.27E-05	1.60E-06
		Formaldehyde	50-00-0	3.57E+00	5.13E-05	5.58E-04	7.03E-05
		Benzene	71-43-2	6.17E-01	8.86E-06	9.63E-05	1.21E-05
		Acetaldehyde	75-07-0	1.51E-01	2.17E-06	2.36E-05	2.97E-06
		Toluene	108-88-3	7.33E-02	1.05E-06	1.14E-05	1.44E-06
		Manganese	7439-96-5	9.31E-02	1.34E-06	1.45E-05	1.83E-06
		Mercury	7439-97-6	5.80E-03	8.34E-08	9.08E-07	1.14E-07
		Nickel	7440-02-0	1.16E-02	1.67E-07	1.82E-06	2.29E-07
		Cadmium	7440-43-9	1.16E-02	1.67E-07	1.82E-06	2.29E-07
		Copper	7440-50-8	4.65E-02	6.68E-07	7.27E-06	9.16E-07
		Chromium (VI)	18540-29-9	2.90E-03	4.17E-08	4.54E-07	5.72E-08
25	Heaters 303, 304, 305 & 306	PAHs	1151	3.81E-01	5.47E-06	8.15E-05	1.03E-05
		Formaldehyde	50-00-0	1.67E+01	2.40E-04	3.57E-03	4.50E-04

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	2.88E+00	4.14E-05	6.17E-04	7.77E-05
		Acetaldehyde	75-07-0	7.07E-01	1.02E-05	1.51E-04	1.90E-05
		Toluene	108-88-3	3.43E-01	4.93E-06	7.33E-05	9.24E-06
		Manganese	7439-96-5	4.35E-01	6.26E-06	9.31E-05	1.17E-05
		Mercury	7439-97-6	2.72E-02	3.91E-07	5.82E-06	7.33E-07
		Nickel	7440-02-0	5.45E-02	7.83E-07	1.16E-05	1.46E-06
		Cadmium	7440-43-9	5.45E-02	7.83E-07	1.16E-05	1.46E-06
		Copper	7440-50-8	2.18E-01	3.13E-06	4.66E-05	5.87E-06
		Chromium (VI)	18540-29-9	1.36E-02	1.95E-07	2.91E-06	3.67E-07
26	Heater 402	PAHs	1151	1.04E-01	1.50E-06	1.29E-05	1.63E-06
		Formaldehyde	50-00-0	4.57E+00	6.57E-05	5.65E-04	7.12E-05
		Benzene	71-43-2	7.88E-01	1.13E-05	9.76E-05	1.23E-05
		Acetaldehyde	75-07-0	1.93E-01	2.78E-06	2.39E-05	3.01E-06
		Toluene	108-88-3	9.37E-02	1.35E-06	1.16E-05	1.46E-06
		Manganese	7439-96-5	1.19E-01	1.71E-06	1.47E-05	1.85E-06
		Mercury	7439-97-6	7.40E-03	1.06E-07	9.21E-07	1.16E-07
		Nickel	7440-02-0	1.49E-02	2.14E-07	1.84E-06	2.32E-07
		Cadmium	7440-43-9	1.49E-02	2.14E-07	1.84E-06	2.32E-07
		Copper	7440-50-8	5.95E-02	8.55E-07	7.37E-06	9.29E-07
		Chromium (VI)	18540-29-9	3.70E-03	5.32E-08	4.60E-07	5.80E-08
27	Heater 501/502	PAHs	1151	6.90E-03	9.92E-08	9.28E-07	1.17E-07
		Formaldehyde	50-00-0	3.01E+00	4.33E-05	4.07E-04	5.13E-05
		Benzene	71-43-2	5.20E-01	7.48E-06	7.02E-05	8.85E-06
		Acetaldehyde	75-07-0	1.28E-01	1.84E-06	1.72E-05	2.17E-06
		Toluene	108-88-3	6.19E-02	8.90E-07	8.35E-06	1.05E-06
		Manganese	7439-96-5	7.86E-02	1.13E-06	1.06E-05	1.34E-06
		Mercury	7439-97-6	4.90E-03	7.04E-08	6.63E-07	8.35E-08
		Nickel	7440-02-0	9.80E-03	1.41E-07	1.33E-06	1.68E-07
		Cadmium	7440-43-9	9.80E-03	1.41E-07	1.33E-06	1.68E-07
		Copper	7440-50-8	3.93E-02	5.65E-07	5.30E-06	6.68E-07
		Chromium (VI)	18540-29-9	2.50E-03	3.59E-08	3.31E-07	4.17E-08

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
28	D30	Benzene	71-43-2	1.57E+00	2.26E-05	4.25E-04	5.35E-05
29	D31	PAHs	1151	6.44E-02	9.26E-07	9.33E-06	1.18E-06
		PAHs	1151	2.08E-01	2.98E-06	5.61E-05	7.07E-06
		Formaldehyde	50-00-0	9.10E+00	1.31E-04	2.46E-03	3.10E-04
		Formaldehyde	50-00-0	2.83E+00	4.06E-05	4.09E-04	5.15E-05
		Formaldehyde	50-00-0	2.83E+00	4.06E-05	4.09E-04	5.15E-05
		Benzene	71-43-2	4.88E-01	7.01E-06	7.06E-05	8.90E-06
		Benzene	71-43-2	4.88E-01	7.01E-06	7.06E-05	8.90E-06
		Acetaldehyde	75-07-0	1.20E-01	1.72E-06	1.73E-05	2.18E-06
		Acetaldehyde	75-07-0	3.85E-01	5.54E-06	1.04E-04	1.31E-05
		Toluene	108-88-3	5.80E-02	8.34E-07	8.40E-06	1.06E-06
		Toluene	108-88-3	1.87E-01	2.68E-06	5.05E-05	6.36E-06
		Manganese	7439-96-5	7.36E-02	1.06E-06	1.07E-05	1.35E-06
		Manganese	7439-96-5	2.37E-01	3.41E-06	6.41E-05	8.08E-06
		Mercury	7439-97-6	4.60E-03	6.61E-08	6.67E-07	8.40E-08
		Mercury	7439-97-6	1.48E-02	2.13E-07	4.01E-06	5.05E-07
		Nickel	7440-02-0	9.20E-03	1.32E-07	1.33E-06	1.68E-07
		Nickel	7440-02-0	2.96E-02	4.25E-07	8.02E-06	1.01E-06
		Cadmium	7440-43-9	9.20E-03	1.32E-07	1.33E-06	1.68E-07
		Cadmium	7440-43-9	2.96E-02	4.25E-07	8.02E-06	1.01E-06
		Copper	7440-50-8	3.68E-02	5.29E-07	5.33E-06	6.72E-07
		Copper	7440-50-8	1.19E-01	1.70E-06	3.21E-05	4.04E-06
		Chromium (VI)	18540-29-9	2.30E-02	3.31E-07	3.33E-06	4.20E-07
		Chromium (VI)	18540-29-9	7.40E-03	1.06E-07	2.00E-06	2.52E-07
30	D123	PAHs	1151	2.28E-02	3.28E-07	3.38E-06	4.26E-07
		Formaldehyde	50-00-0	9.98E-01	1.44E-05	1.48E-04	1.86E-05
		Benzene	71-43-2	1.72E-01	2.48E-06	2.56E-05	3.23E-06
		Acetaldehyde	75-07-0	4.23E-02	6.08E-07	6.28E-06	7.91E-07
		Toluene	108-88-3	2.05E-02	2.95E-07	3.05E-06	3.84E-07
		Manganese	7439-96-5	2.60E-02	3.74E-07	3.87E-06	4.88E-07
		Mercury	7439-97-6	1.60E-03	2.30E-08	2.42E-07	3.05E-08

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Nickel	7440-02-0	3.30E-03	4.74E-08	4.83E-07	6.09E-08
		Cadmium	7440-43-9	3.30E-03	4.74E-08	4.83E-07	6.09E-08
		Copper	7440-50-8	1.30E-02	1.87E-07	1.93E-06	2.43E-07
		Chromium (VI)	18540-29-9	8.00E-04	1.15E-08	1.21E-07	1.52E-08
31	D124	PAHs	1151	2.40E-02	3.45E-07	3.91E-06	4.93E-07
		Acetaldehyde	75-07-0	4.46E-02	6.41E-07	7.26E-06	9.15E-07
		Toluene	108-88-3	2.16E-02	3.10E-07	3.52E-06	4.44E-07
		Manganese	7439-96-5	2.74E-02	3.94E-07	4.47E-06	5.63E-07
		Mercury	7439-97-6	1.70E-03	2.44E-08	2.79E-07	3.52E-08
		Nickel	7440-02-0	3.40E-03	4.89E-08	5.58E-07	7.03E-08
		Cadmium	7440-43-9	3.40E-03	4.89E-08	5.58E-07	7.03E-08
		Copper	7440-50-8	1.37E-02	1.97E-07	2.23E-06	2.81E-07
		Chromium (VI)	18540-29-9	9.00E-04	1.29E-08	1.40E-07	1.76E-08
32	D125	Formaldehyde	50-00-0	2.09E-01	3.00E-06	1.64E-05	2.07E-06
		Benzo(a)pyrene	50-32-8	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		Dibenzo(a,h)anthracene	53-70-3	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		3-Methylcholanthrene	56-49-5	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Benzo(a)anthracene	56-55-3	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		7,12-Dimethylbenz(a)anthracene	57-97-6	1.03E-04	1.49E-09	1.20E-08	1.51E-09
		Benzene	71-43-2	9.84E-02	1.41E-06	7.73E-06	9.74E-07
		Acetaldehyde	75-07-0	5.26E-02	7.56E-07	4.13E-06	5.20E-07
		Acenaphthene	83-32-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Phenanthrene	85-01-8	1.10E-04	1.58E-09	1.28E-08	1.61E-09
		Fluorene	86-73-7	1.81E-05	2.60E-10	2.10E-09	2.65E-10
		Naphthalene	91-20-3	5.10E-03	7.33E-08	4.00E-07	5.04E-08
		2-Methylnaphthalene	91-57-6	1.55E-04	2.23E-09	1.80E-08	2.27E-09
		Ethyl Benzene	100-41-4	1.17E-01	1.68E-06	9.20E-06	1.16E-06
		Acrolein	107-02-8	4.58E-02	6.58E-07	3.60E-06	4.54E-07
		Toluene	108-88-3	4.49E-01	6.46E-06	3.53E-05	4.45E-06
		Hexane	110-54-3	7.80E-02	1.12E-06	6.13E-06	7.72E-07
		Anthracene	120-12-7	1.55E-05	2.23E-10	1.80E-09	2.27E-10

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Pyrene	129-00-0	3.23E-05	4.64E-10	3.75E-09	4.72E-10
		Benzo(g,h,i)perylene	191-24-2	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		Indeno(1,2,3-c,d)pyrene	193-39-5	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Benzo(b)fluoranthene	205-99-2	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Fluoranthene	206-44-0	1.94E-05	2.79E-10	2.25E-09	2.83E-10
		Benzo(k)fluoranthene	207-08-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Acenaphthylene	208-96-8	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Chrysene	218-01-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Xylenes	1330-20-7	3.34E-01	4.80E-06	2.63E-05	3.31E-06
		Manganese	7439-96-5	2.71E-02	3.90E-07	2.13E-06	2.68E-07
		Mercury	7439-97-6	1.70E-03	2.44E-08	1.33E-07	1.68E-08
		Nickel	7440-02-0	3.40E-03	4.89E-08	2.67E-07	3.36E-08
		Cadmium	7440-43-9	3.40E-03	4.89E-08	2.67E-07	3.36E-08
		Copper	7440-50-8	1.36E-02	1.95E-07	1.07E-06	1.35E-07
		Ammonia	7664-41-7	5.43E+01	7.80E-04	4.27E-03	5.38E-04
		Chromium (VI)	18540-29-9	8.00E-04	1.15E-08	6.67E-08	8.40E-09
33	D126	PAHs	1151	3.78E-02	5.43E-07	4.67E-06	5.88E-07
		Formaldehyde	50-00-0	1.66E+00	2.38E-05	2.05E-04	2.58E-05
		Benzene	71-43-2	2.86E-01	4.11E-06	3.53E-05	4.45E-06
		Acetaldehyde	75-07-0	7.01E-02	1.01E-06	8.67E-06	1.09E-06
		Toluene	108-88-3	3.40E-02	4.89E-07	4.20E-06	5.29E-07
		Manganese	7439-96-5	4.32E-02	6.21E-07	5.33E-06	6.72E-07
		Mercury	7439-97-6	2.70E-03	3.88E-08	3.33E-07	4.20E-08
		Nickel	7440-02-0	5.40E-03	7.76E-08	6.67E-07	8.40E-08
		Cadmium	7440-43-9	5.40E-03	7.76E-08	6.67E-07	8.40E-08
		Copper	7440-50-8	2.16E-02	3.10E-07	2.67E-06	3.36E-07
		Chromium (VI)	18540-29-9	1.30E-03	1.87E-08	1.67E-07	2.10E-08
34	D127	PAHs	1151	2.24E-02	3.22E-07	2.86E-06	3.60E-07
		Formaldehyde	50-00-0	9.81E-01	1.41E-05	1.25E-04	1.57E-05
		Benzene	71-43-2	1.69E-01	2.43E-06	2.16E-05	2.72E-06
		Acetaldehyde	75-07-0	4.15E-02	5.96E-07	5.31E-06	6.69E-07

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	2.01E-02	2.89E-07	2.57E-06	3.24E-07
		Manganese	7439-96-5	2.56E-02	3.68E-07	3.27E-06	4.12E-07
		Mercury	7439-97-6	1.60E-03	2.30E-08	2.04E-07	2.57E-08
		Nickel	7440-02-0	3.20E-03	4.60E-08	4.08E-07	5.14E-08
		Cadmium	7440-43-9	3.20E-03	4.60E-08	4.08E-07	5.14E-08
		Copper	7440-50-8	1.28E-02	1.84E-07	1.63E-06	2.05E-07
		Chromium (VI)	18540-29-9	8.00E-04	1.15E-08	1.02E-07	1.29E-08
35	D26	PAHs	1151	4.70E-02	6.76E-07	8.40E-06	1.06E-06
		Formaldehyde	50-00-0	2.06E+00	2.96E-05	3.68E-04	4.64E-05
		Benzene	71-43-2	3.56E-01	5.11E-06	6.36E-05	8.01E-06
		Acetaldehyde	75-07-0	8.73E-02	1.25E-06	1.56E-05	1.97E-06
		Toluene	108-88-3	4.23E-02	6.08E-07	7.56E-06	9.53E-07
		Manganese	7439-96-5	5.37E-02	7.72E-07	9.60E-06	1.21E-06
		Mercury	7439-97-6	3.40E-03	4.89E-08	6.00E-07	7.56E-08
		Cadmium	7440-43-9	6.70E-03	9.63E-08	1.20E-06	1.51E-07
		Copper	7440-50-8	2.69E-02	3.87E-07	4.80E-06	6.05E-07
		Chromium (VI)	18540-29-9	1.70E-03	2.44E-08	3.00E-07	3.78E-08
36	D29	PAHs	1151	3.01E-01	4.33E-06	6.68E-05	8.42E-06
		Formaldehyde	50-00-0	1.32E+01	1.90E-04	2.93E-03	3.69E-04
		Benzene	71-43-2	2.28E+00	3.28E-05	5.06E-04	6.38E-05
		Toluene	108-88-3	2.71E-01	3.90E-06	6.01E-05	7.57E-06
		Manganese	7439-96-5	3.45E-01	4.95E-06	7.63E-05	9.61E-06
		Mercury	7439-97-6	2.15E-02	3.09E-07	4.77E-06	6.01E-07
		Nickel	7440-02-0	4.31E-02	6.19E-07	9.54E-06	1.20E-06
		Cadmium	7440-43-9	4.31E-02	6.19E-07	9.54E-06	1.20E-06
		Copper	7440-50-8	1.72E-01	2.48E-06	3.82E-05	4.81E-06
		Chromium (VI)	18540-29-9	1.08E-02	1.55E-07	2.39E-06	3.01E-07
37	D27	PAHs	1151	9.48E-02	1.36E-06	2.01E-05	2.53E-06
		Formaldehyde	50-00-0	4.16E+00	5.97E-05	8.80E-04	1.11E-04
		Benzene	71-43-2	7.17E-01	1.03E-05	1.52E-04	1.92E-05
		Acetaldehyde	75-07-0	1.76E-01	2.53E-06	3.73E-05	4.70E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	8.53E-02	1.23E-06	1.81E-05	2.28E-06
		Manganese	7439-96-5	1.08E-01	1.56E-06	2.29E-05	2.89E-06
		Mercury	7439-97-6	6.80E-03	9.77E-08	1.43E-06	1.80E-07
		Nickel	7440-02-0	1.35E-02	1.94E-07	2.87E-06	3.62E-07
		Cadmium	7440-43-9	1.35E-02	1.94E-07	2.87E-06	3.62E-07
		Copper	7440-50-8	5.42E-02	7.79E-07	1.15E-05	1.45E-06
		Chromium (VI)	18540-29-9	3.40E-03	4.89E-08	7.17E-07	9.03E-08
38	D28	PAHs	1151	3.07E-02	4.41E-07	4.67E-06	5.88E-07
		Formaldehyde	50-00-0	1.35E+00	1.93E-05	2.05E-04	2.58E-05
		Benzene	71-43-2	2.32E-01	3.34E-06	3.53E-05	4.45E-06
		Acetaldehyde	75-07-0	5.70E-02	8.19E-07	8.67E-06	1.09E-06
		Toluene	108-88-3	2.76E-02	3.97E-07	4.20E-06	5.29E-07
		Manganese	7439-96-5	3.51E-02	5.05E-07	5.33E-06	6.72E-07
		Mercury	7439-97-6	2.20E-03	3.16E-08	3.33E-07	4.20E-08
		Nickel	7440-02-0	4.40E-03	6.32E-08	6.67E-07	8.40E-08
		Cadmium	7440-43-9	4.40E-03	6.32E-08	6.67E-07	8.40E-08
		Copper	7440-50-8	1.75E-02	2.52E-07	2.67E-06	3.36E-07
		Chromium (VI)	18540-29-9	1.10E-03	1.58E-08	1.67E-07	2.10E-08
39	D128	1,2,4-Trimethylbenzene	95-63-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	D129	PAHs	1151	2.58E-02	3.71E-07	3.85E-06	4.85E-07
		Formaldehyde	50-00-0	1.13E+00	1.63E-05	1.69E-04	2.13E-05
		Benzene	71-43-2	1.96E-01	2.81E-06	2.91E-05	3.67E-06
		Acetaldehyde	75-07-0	4.80E-02	6.90E-07	7.15E-06	9.01E-07
		Toluene	108-88-3	2.32E-02	3.33E-07	3.47E-06	4.37E-07
		Manganese	7439-96-5	2.95E-02	4.24E-07	4.40E-06	5.54E-07
		Mercury	7439-97-6	1.80E-03	2.59E-08	2.75E-07	3.46E-08
		Nickel	7440-02-0	3.70E-03	5.32E-08	5.50E-07	6.93E-08
		Cadmium	7440-43-9	3.70E-03	5.32E-08	5.50E-07	6.93E-08
		Copper	7440-50-8	1.48E-02	2.13E-07	2.20E-06	2.77E-07
		Chromium (VI)	18540-29-9	9.00E-04	1.29E-08	1.38E-07	1.74E-08
41	Heater 905	Formaldehyde	50-00-0	1.10E-01	1.58E-06	1.28E-05	1.61E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzo(a)pyrene	50-32-8	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		Dibenzo(a,h)anthracene	53-70-3	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		3-Methylcholanthrene	56-49-5	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Benzo(a)anthracene	56-55-3	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		7,12-Dimethylbenz(a)anthracene	57-97-6	1.03E-04	1.49E-09	1.20E-08	1.51E-09
		Benzene	71-43-2	5.17E-02	7.43E-07	6.00E-06	7.56E-07
		Acetaldehyde	75-07-0	2.78E-02	4.00E-07	3.23E-06	4.07E-07
		Acenaphthene	83-32-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Phenanthrene	85-01-8	1.10E-04	1.58E-09	1.28E-08	1.61E-09
		Fluorene	86-73-7	1.81E-05	2.60E-10	2.10E-09	2.65E-10
		Naphthalene	91-20-3	1.90E-03	2.73E-08	2.25E-07	2.83E-08
		2-Methylnaphthalene	91-57-6	1.55E-04	2.23E-09	1.80E-08	2.27E-09
		Ethyl Benzene	100-41-4	6.14E-02	8.83E-07	7.13E-06	8.98E-07
		Acrolein	107-02-8	1.74E-02	2.50E-07	2.03E-06	2.56E-07
		Toluene	108-88-3	2.36E-01	3.40E-06	2.75E-05	3.46E-06
		Hexane	110-54-3	4.07E-02	5.85E-07	4.73E-06	5.96E-07
		Anthracene	120-12-7	1.55E-05	2.23E-10	1.80E-09	2.27E-10
		Pyrene	129-00-0	3.23E-05	4.64E-10	3.75E-09	4.72E-10
		Benzo(g,h,i)perylene	191-24-2	7.75E-06	1.11E-10	9.00E-10	1.13E-10
		Indeno(1,2,3-c,d)pyrene	193-39-5	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Benzo(b)fluoranthene	205-99-2	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Fluoranthene	206-44-0	1.94E-05	2.79E-10	2.25E-09	2.83E-10
		Benzo(k)fluoranthene	207-08-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Acenaphthylene	208-96-8	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Chrysene	218-01-9	1.16E-05	1.67E-10	1.35E-09	1.70E-10
		Xylenes	1330-20-7	1.76E-01	2.53E-06	2.04E-05	2.57E-06
		Manganese	7439-96-5	1.03E-02	1.48E-07	1.20E-06	1.51E-07
		Mercury	7439-97-6	6.00E-04	8.62E-09	7.50E-08	9.45E-09
		Cadmium	7440-43-9	1.30E-03	1.87E-08	1.50E-07	1.89E-08
		Copper	7440-50-8	5.20E-03	7.47E-08	6.00E-07	7.56E-08
		Ammonia	7664-41-7	2.07E+01	2.97E-04	2.40E-03	3.02E-04

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Chromium (VI)	18540-29-9	3.00E-04	4.31E-09	3.75E-08	4.72E-09
42	Heater 907	PAHs	1151	1.48E-01	2.13E-06	1.76E-05	2.22E-06
		Formaldehyde	50-00-0	6.49E+00	9.33E-05	7.73E-04	9.74E-05
		Benzene	71-43-2	1.12E+00	1.61E-05	1.33E-04	1.68E-05
		Acetaldehyde	75-07-0	2.75E-01	3.95E-06	3.27E-05	4.12E-06
		Toluene	108-88-3	1.33E-01	1.91E-06	1.59E-05	2.00E-06
		Manganese	7439-96-5	1.69E-01	2.43E-06	2.01E-05	2.53E-06
		Mercury	7439-97-6	1.06E-02	1.52E-07	1.26E-06	1.59E-07
		Nickel	7440-02-0	2.11E-02	3.03E-07	2.52E-06	3.18E-07
		Cadmium	7440-43-9	2.11E-02	3.03E-07	2.52E-06	3.18E-07
		Copper	7440-50-8	8.46E-02	1.22E-06	1.01E-05	1.27E-06
		Chromium (VI)	18540-29-9	5.30E-03	7.62E-08	6.29E-07	7.93E-08
43	LPG Load Rack 22	1,2,4-Trimethylbenzene	95-63-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00
44	Load Racks 11, 13, 15, & 26	PAHs	1151	2.70E-06	3.88E-11	3.08E-10	3.88E-11
		Formaldehyde	50-00-0	2.50E-09	3.59E-14	2.85E-13	3.59E-14
		Benzene	71-43-2	1.91E-04	2.75E-09	2.18E-08	2.75E-09
		Acetaldehyde	75-07-0	1.18E-07	1.70E-12	1.34E-11	1.69E-12
		Naphthalene	91-20-3	1.03E-04	1.48E-09	1.18E-08	1.49E-09
		Ethyl Benzene	100-41-4	3.04E-04	4.37E-09	3.47E-08	4.37E-09
		Acrolein	107-02-8	3.45E-08	4.96E-13	3.93E-12	4.95E-13
		Toluene	108-88-3	1.43E-04	2.05E-09	1.63E-08	2.05E-09
		Anthracene	120-12-7	6.82E-06	9.80E-11	7.79E-10	9.82E-11
		Xylenes	1330-20-7	3.27E-04	4.70E-09	3.74E-08	4.71E-09
45	Load Rack 1,2, & 14	PAHs	1151	3.13E-10	4.50E-15	3.58E-14	4.51E-15
		Formaldehyde	50-00-0	2.90E-13	4.17E-18	3.31E-17	4.17E-18
		Benzene	71-43-2	6.03E-04	8.67E-09	6.88E-08	8.67E-09
		Acetaldehyde	75-07-0	1.37E-11	1.97E-16	1.56E-15	1.97E-16
		Naphthalene	91-20-3	5.78E-06	8.31E-11	6.59E-10	8.30E-11
		Ethyl Benzene	100-41-4	8.22E-05	1.18E-09	9.39E-09	1.18E-09
		Acrolein	107-02-8	4.00E-12	5.75E-17	4.57E-16	5.76E-17
		Toluene	108-88-3	6.17E-04	8.88E-09	7.05E-08	8.88E-09

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Anthracene	120-12-7	7.93E-10	1.14E-14	9.05E-14	1.14E-14
		Xylenes	1330-20-7	3.36E-04	4.83E-09	3.83E-08	4.83E-09
46	Load Racks 16, 17, & 18	PAHs	1151	2.70E-06	3.88E-11	3.08E-10	3.88E-11
		Formaldehyde	50-00-0	2.50E-09	3.59E-14	2.85E-13	3.59E-14
		Benzene	71-43-2	1.91E-04	2.75E-09	2.18E-08	2.75E-09
		Acetaldehyde	75-07-0	1.18E-07	1.70E-12	1.34E-11	1.69E-12
		Naphthalene	91-20-3	1.03E-04	1.48E-09	1.18E-08	1.49E-09
		Ethyl Benzene	100-41-4	3.04E-04	4.37E-09	3.47E-08	4.37E-09
		Acrolein	107-02-8	3.45E-08	4.96E-13	3.93E-12	4.95E-13
		Toluene	108-88-3	1.43E-04	2.05E-09	1.63E-08	2.05E-09
		Anthracene	120-12-7	6.82E-06	9.80E-11	7.79E-10	9.82E-11
		Xylenes	1330-20-7	3.27E-04	4.70E-09	3.74E-08	4.71E-09
47	Load Racks 19,20, &21	Benzene	71-43-2	1.44E+00	2.07E-05	1.64E-04	2.07E-05
		Naphthalene	91-20-3	5.77E-06	8.29E-11	6.58E-10	8.29E-11
		Ethyl Benzene	100-41-4	8.22E-05	1.18E-09	9.38E-09	1.18E-09
		Toluene	108-88-3	7.88E-03	1.13E-07	8.99E-07	1.13E-07
		Hexane	110-54-3	1.66E+01	2.39E-04	1.90E-03	2.39E-04
		Xylenes	1330-20-7	3.36E-04	4.83E-09	3.83E-08	4.83E-09
48	Load Racks 3,4,5, & 23	Benzene	71-43-2	1.44E+00	2.07E-05	1.64E-04	2.07E-05
		Naphthalene	91-20-3	5.77E-06	8.29E-11	6.58E-10	8.29E-11
		Ethyl Benzene	100-41-4	8.22E-05	1.18E-09	9.38E-09	1.18E-09
		Toluene	108-88-3	7.88E-03	1.13E-07	8.99E-07	1.13E-07
		Hexane	110-54-3	1.66E+01	2.39E-04	1.90E-03	2.39E-04
		Xylenes	1330-20-7	3.36E-04	4.83E-09	3.83E-08	4.83E-09
49	Load Rack 6,7, 8, &12	PAHs	1151	2.70E-06	3.88E-11	3.08E-10	3.88E-11
		Formaldehyde	50-00-0	2.50E-09	3.59E-14	2.85E-13	3.59E-14
		Benzene	71-43-2	1.91E-04	2.75E-09	2.18E-08	2.75E-09
		Acetaldehyde	75-07-0	1.18E-07	1.70E-12	1.34E-11	1.69E-12
		Naphthalene	91-20-3	1.03E-04	1.48E-09	1.18E-08	1.49E-09
		Ethyl Benzene	100-41-4	3.04E-04	4.37E-09	3.47E-08	4.37E-09
		Acrolein	107-02-8	3.45E-08	4.96E-13	3.93E-12	4.95E-13

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	1.43E-04	2.05E-09	1.63E-08	2.05E-09
		Anthracene	120-12-7	6.82E-06	9.80E-11	7.79E-10	9.82E-11
		Xylenes	1330-20-7	3.27E-04	4.70E-09	3.74E-08	4.71E-09
50	Rail Loading	PAHs	1151	2.70E-06	3.88E-11	3.08E-10	3.88E-11
		Formaldehyde	50-00-0	2.50E-09	3.59E-14	2.85E-13	3.59E-14
		Benzene	71-43-2	1.44E+00	2.07E-05	1.64E-04	2.07E-05
		Acetaldehyde	75-07-0	1.18E-07	1.70E-12	1.34E-11	1.69E-12
		Naphthalene	91-20-3	1.09E-04	1.56E-09	1.24E-08	1.56E-09
		Ethyl Benzene	100-41-4	3.86E-04	5.55E-09	4.41E-08	5.56E-09
		Acrolein	107-02-8	3.45E-08	4.96E-13	3.93E-12	4.95E-13
		Toluene	108-88-3	8.02E-03	1.15E-07	9.15E-07	1.15E-07
		Hexane	110-54-3	1.66E+01	2.39E-04	1.90E-03	2.39E-04
		Anthracene	120-12-7	6.82E-06	9.80E-11	7.79E-10	9.82E-11
		Xylenes	1330-20-7	6.63E-04	9.53E-09	7.57E-08	9.54E-09
51	LSR Chiller Unit Fugitives	Benzene	71-43-2	2.38E+00	3.42E-05	2.72E-04	3.43E-05
		Naphthalene	91-20-3	1.88E-04	2.71E-09	2.15E-08	2.71E-09
		1,2,4-Trimethylbenzene	95-63-6	2.90E-02	4.17E-07	3.31E-06	4.17E-07
		Ethyl Benzene	100-41-4	4.20E-02	6.04E-07	4.80E-06	6.05E-07
		Toluene	108-88-3	1.31E+00	1.88E-05	1.50E-04	1.88E-05
		Hexane	110-54-3	1.72E+01	2.47E-04	1.96E-03	2.47E-04
		Xylenes	1330-20-7	1.11E-01	1.60E-06	1.27E-05	1.60E-06
52	Naphtha Splitter Fugitives	PAHs	1151	2.81E-05	4.04E-10	3.21E-09	4.04E-10
		Formaldehyde	50-00-0	2.60E-08	3.74E-13	2.97E-12	3.74E-13
		Benzo(a)pyrene	50-32-8	1.23E-05	1.77E-10	1.41E-09	1.78E-10
		Dibenzo(a,h)anthracene	53-70-3	1.67E-06	2.40E-11	1.91E-10	2.41E-11
		Benzo(a)anthracene	56-55-3	5.06E-05	7.27E-10	5.77E-09	7.27E-10
		Benzene	71-43-2	7.09E+00	1.02E-04	8.09E-04	1.02E-04
		Acetaldehyde	75-07-0	1.22E-06	1.75E-11	1.40E-10	1.76E-11
		Naphthalene	91-20-3	1.05E-02	1.51E-07	1.20E-06	1.51E-07
		1,2,4-Trimethylbenzene	95-63-6	8.63E-01	1.24E-05	9.85E-05	1.24E-05
		Ethyl Benzene	100-41-4	2.43E-01	3.49E-06	2.78E-05	3.50E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Acrolein	107-02-8	3.59E-07	5.16E-12	4.09E-11	5.15E-12
		Toluene	108-88-3	4.39E+00	6.31E-05	5.02E-04	6.33E-05
		Hexane	110-54-3	4.65E+01	6.68E-04	5.31E-03	6.69E-04
		Anthracene	120-12-7	3.55E-05	5.10E-10	4.05E-09	5.10E-10
		Benzo(b)fluoranthene	205-99-2	3.79E-05	5.45E-10	4.32E-09	5.44E-10
		Benzo(k)fluoranthene	207-08-9	4.74E-05	6.81E-10	5.42E-09	6.83E-10
		Chrysene	218-01-9	3.47E-05	4.99E-10	3.96E-09	4.99E-10
		Xylenes	1330-20-7	8.41E-01	1.21E-05	9.60E-05	1.21E-05
53	Naphtha Stripper Fugitives	Benzene	71-43-2	2.42E+00	3.49E-05	2.77E-04	3.49E-05
		Naphthalene	91-20-3	1.92E-04	2.76E-09	2.19E-08	2.76E-09
		1,2,4-Trimethylbenzene	95-63-6	2.95E-02	4.25E-07	3.37E-06	4.25E-07
		Ethyl Benzene	100-41-4	4.28E-02	6.15E-07	4.89E-06	6.16E-07
		Toluene	108-88-3	1.33E+00	1.92E-05	1.52E-04	1.92E-05
		Hexane	110-54-3	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes	1330-20-7	1.14E-01	1.63E-06	1.30E-05	1.64E-06
54	T100001	No emissions of toxics					
55	T100002	No emissions of toxics					
56	T10001	Benzene	71-43-2	3.49E-03	5.01E-08	3.98E-07	5.01E-08
		Ethyl Benzene	100-41-4	5.91E-03	8.50E-08	6.75E-07	8.51E-08
		Hexane	110-54-3	7.00E-04	1.01E-08	8.00E-08	1.01E-08
		Toluene	108-88-3	4.16E-02	5.98E-07	4.75E-06	5.98E-07
		Xylenes	1330-20-7	1.17E-01	1.68E-06	1.34E-05	1.69E-06
57	T10003	No emissions of toxics					
58	T10004	No emissions of toxics					
59	T10005	Benzene	71-43-2	2.29E+02	3.29E-03	2.61E-02	3.29E-03
60	T10006	Benzene	71-43-2	2.12E+00	3.05E-05	2.42E-04	3.05E-05
		Ethyl Benzene	100-41-4	2.38E+00	3.43E-05	2.72E-04	3.43E-05
		Hexane	110-54-3	8.04E+00	1.16E-04	9.18E-04	1.16E-04
		Hydrogen Sulfide	7783-06-4	4.93E+00	7.08E-05	5.62E-04	7.08E-05
		Naphthalene	91-20-3	4.79E-02	6.88E-07	5.47E-06	6.89E-07
		Toluene	108-88-3	5.02E+00	7.22E-05	5.73E-04	7.22E-05

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes	1330-20-7	5.85E+00	8.41E-05	6.68E-04	8.41E-05
61	T10007	Benzene	71-43-2	4.47E+00	6.42E-05	5.10E-04	6.43E-05
		Ethyl Benzene	100-41-4	5.02E+00	7.21E-05	5.73E-04	7.22E-05
		Hexane	110-54-3	1.69E+01	2.43E-04	1.93E-03	2.43E-04
		Hydrogen Sulfide	7783-06-4	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Naphthalene	91-20-3	1.01E-01	1.45E-06	1.15E-05	1.45E-06
		Toluene	108-88-3	1.06E+01	1.52E-04	1.21E-03	1.52E-04
		Xylenes	1330-20-7	1.23E+01	1.77E-04	1.41E-03	1.77E-04
62	T10008	Benzene	71-43-2	2.16E+00	3.10E-05	2.46E-04	3.10E-05
		Ethyl Benzene	100-41-4	2.42E+00	3.47E-05	2.76E-04	3.48E-05
		Hexane	110-54-3	8.18E+00	1.18E-04	9.33E-04	1.18E-04
		Hydrogen Sulfide	7783-06-4	5.02E+00	7.22E-05	5.73E-04	7.23E-05
		Naphthalene	91-20-3	4.84E-02	6.95E-07	5.52E-06	6.96E-07
		Toluene	108-88-3	5.10E+00	7.32E-05	5.82E-04	7.33E-05
		Xylenes	1330-20-7	5.93E+00	8.52E-05	6.77E-04	8.53E-05
63	T10009	Benzene	71-43-2	3.49E-03	5.01E-08	3.98E-07	5.01E-08
		Ethyl Benzene	100-41-4	5.91E-03	8.50E-08	6.75E-07	8.51E-08
		Hexane	110-54-3	7.00E-04	1.01E-08	8.00E-08	1.01E-08
		Toluene	108-88-3	4.16E-02	5.98E-07	4.75E-06	5.98E-07
		Xylenes	1330-20-7	1.17E-01	1.68E-06	1.34E-05	1.69E-06
64	T1012	No emissions of toxics					
65	T1013	No emissions of toxics					
66	T1014	No emissions of toxics					
67	T1015	No emissions of toxics					
68	T1019	No emissions of toxics					
69	T1020	No emissions of toxics					
70	T1021	No emissions of toxics					
71	T1022	No emissions of toxics					
72	T1023	No emissions of toxics					
73	T1024	No emissions of toxics					
74	T1025	No emissions of toxics					

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
75	T1026	No emissions of toxics					
76	T1027	No emissions of toxics					
77	T1028	No emissions of toxics					
78	T125001	Benzene	71-43-2	1.59E+01	2.29E-04	1.82E-03	2.29E-04
		Ethyl Benzene	100-41-4	4.07E+00	5.86E-05	4.65E-04	5.86E-05
		Hexane	110-54-3	1.50E+01	2.16E-04	1.71E-03	2.16E-04
		Toluene	108-88-3	1.37E+01	1.97E-04	1.57E-03	1.97E-04
		Xylenes	1330-20-7	1.40E+01	2.01E-04	1.59E-03	2.01E-04
79	T125002	Benzene	71-43-2	1.07E+01	1.54E-04	1.22E-03	1.54E-04
		Ethyl Benzene	100-41-4	2.47E+00	3.55E-05	2.82E-04	3.55E-05
		Hexane	110-54-3	1.03E+01	1.48E-04	1.18E-03	1.48E-04
		Toluene	108-88-3	8.71E+00	1.25E-04	9.95E-04	1.25E-04
		Xylenes	1330-20-7	8.42E+00	1.21E-04	9.62E-04	1.21E-04
80	T12501	Benzene	71-43-2	2.06E-02	2.96E-07	2.35E-06	2.97E-07
		Ethyl Benzene	100-41-4	1.14E-01	1.64E-06	1.30E-05	1.64E-06
		Hexane	110-54-3	1.09E-02	1.57E-07	1.24E-06	1.57E-07
		Hydrogen Sulfide	7783-06-4	2.19E-02	3.14E-07	2.50E-06	3.15E-07
		Naphthalene	91-20-3	1.74E-02	2.50E-07	1.98E-06	2.50E-07
		Toluene	108-88-3	4.66E-02	6.70E-07	5.32E-06	6.71E-07
		Xylenes	1330-20-7	3.28E-01	4.72E-06	3.75E-05	4.72E-06
81	T12502	Benzene	71-43-2	2.08E-02	2.98E-07	2.37E-06	2.99E-07
		Ethyl Benzene	100-41-4	1.17E-01	1.69E-06	1.34E-05	1.69E-06
		Hexane	110-54-3	1.09E-02	1.57E-07	1.25E-06	1.57E-07
		Hydrogen Sulfide	7783-06-4	2.19E-02	3.14E-07	2.50E-06	3.15E-07
		Naphthalene	91-20-3	1.80E-02	2.59E-07	2.06E-06	2.59E-07
		Toluene	108-88-3	4.74E-02	6.81E-07	5.41E-06	6.82E-07
		Xylenes	1330-20-7	3.38E-01	4.85E-06	3.85E-05	4.85E-06
82	T141	No emissions of toxics					
83	T142	No emissions of toxics					
84	T150001	No emissions of toxics					
85	T150002	No emissions of toxics					

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
86	T20001	No emissions of toxics					
87	T20002	No emissions of toxics					
88	T20003	No emissions of toxics					
89	T20004	Benzene	71-43-2	6.13E-02	8.80E-07	6.99E-06	8.81E-07
		Ethyl Benzene	100-41-4	1.53E-01	2.20E-06	1.75E-05	2.20E-06
		Hexane	110-54-3	2.21E-01	3.17E-06	2.52E-05	3.17E-06
		Hydrogen Sulfide	7783-06-4	1.23E-01	1.76E-06	1.40E-05	1.76E-06
		Naphthalene	91-20-3	7.61E-02	1.09E-06	8.69E-06	1.09E-06
		Toluene	108-88-3	1.90E-01	2.73E-06	2.17E-05	2.73E-06
		Xylenes	1330-20-7	4.08E-01	5.87E-06	4.66E-05	5.87E-06
90	T20005	Benzene	71-43-2	6.35E+00	9.12E-05	7.24E-04	9.13E-05
		Ethyl Benzene	100-41-4	1.29E+01	1.85E-04	1.47E-03	1.85E-04
		Hexane	110-54-3	3.59E+00	5.16E-05	4.10E-04	5.17E-05
		Hydrogen Sulfide	7783-06-4	8.15E+00	1.17E-04	9.31E-04	1.17E-04
		Naphthalene	91-20-3	6.86E-02	9.86E-07	7.83E-06	9.87E-07
		Toluene	108-88-3	1.00E+01	1.44E-04	1.14E-03	1.44E-04
		Xylenes	1330-20-7	3.37E+01	4.84E-04	3.84E-03	4.84E-04
91	T2014	No emissions of toxics					
92	T203	No emissions of toxics					
93	T2044	No emissions of toxics					
94	T2046	No emissions of toxics					
95	T2047	No emissions of toxics					
96	T2048	No emissions of toxics					
97	T2049	No emissions of toxics					
98	T25001	Benzene	71-43-2	3.30E+00	4.74E-05	3.76E-04	4.74E-05
		Ethyl Benzene	100-41-4	5.95E-01	8.55E-06	6.79E-05	8.56E-06
		Hexane	110-54-3	3.57E+00	5.12E-05	4.07E-04	5.13E-05
		Methanol	67-56-1	1.26E-01	1.82E-06	1.44E-05	1.82E-06
		Naphthalene	91-20-3	1.97E-01	2.83E-06	2.25E-05	2.83E-06
		Toluene	108-88-3	4.56E+00	6.55E-05	5.20E-04	6.56E-05
		Xylenes	1330-20-7	9.79E+00	1.41E-04	1.12E-03	1.41E-04

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
99	T25002	Benzene	71-43-2	2.89E+00	4.16E-05	3.30E-04	4.16E-05
		Ethyl Benzene	100-41-4	3.11E-01	4.47E-06	3.55E-05	4.47E-06
		Hexane	110-54-3	3.27E+00	4.71E-05	3.74E-04	4.71E-05
		Methanol	67-56-1	1.14E-01	1.64E-06	1.30E-05	1.64E-06
		Naphthalene	91-20-3	6.48E-02	9.32E-07	7.40E-06	9.33E-07
		Toluene	108-88-3	3.22E+00	4.62E-05	3.67E-04	4.63E-05
		Xylenes	1330-20-7	4.93E+00	7.09E-05	5.63E-04	7.09E-05
100	T25003	Benzene	71-43-2	3.49E+00	5.01E-05	3.98E-04	5.01E-05
		Ethyl Benzene	100-41-4	6.42E-01	9.23E-06	7.33E-05	9.24E-06
		Hexane	110-54-3	1.33E+01	1.91E-04	1.52E-03	1.92E-04
		Toluene	108-88-3	4.53E+00	6.51E-05	5.17E-04	6.51E-05
		Xylenes	1330-20-7	3.06E+00	4.40E-05	3.50E-04	4.41E-05
101	T25004	Benzene	71-43-2	4.26E+00	6.13E-05	4.87E-04	6.13E-05
		Ethyl Benzene	100-41-4	1.29E+00	1.85E-05	1.47E-04	1.85E-05
		Hexane	110-54-3	1.53E+01	2.19E-04	1.74E-03	2.19E-04
		Toluene	108-88-3	7.11E+00	1.02E-04	8.12E-04	1.02E-04
		Xylenes	1330-20-7	6.30E+00	9.05E-05	7.19E-04	9.06E-05
102	T25005	Benzene	71-43-2	3.02E+00	4.34E-05	3.45E-04	4.34E-05
		Ethyl Benzene	100-41-4	3.95E-01	5.67E-06	4.50E-05	5.68E-06
		Hexane	110-54-3	3.37E+00	4.84E-05	3.85E-04	4.84E-05
		Methanol	67-56-1	1.18E-01	1.69E-06	1.35E-05	1.70E-06
		Naphthalene	91-20-3	1.03E-01	1.49E-06	1.18E-05	1.49E-06
		Toluene	108-88-3	3.62E+00	5.20E-05	4.13E-04	5.20E-05
		Xylenes	1330-20-7	6.36E+00	9.14E-05	7.26E-04	9.15E-05
103	T25006	Benzene	71-43-2	3.75E+00	5.39E-05	4.28E-04	5.39E-05
		Ethyl Benzene	100-41-4	3.31E-01	4.75E-06	3.78E-05	4.76E-06
		Hexane	110-54-3	4.29E+00	6.17E-05	4.90E-04	6.17E-05
		Methanol	67-56-1	1.49E-01	2.14E-06	1.70E-05	2.14E-06
		Naphthalene	91-20-3	4.72E-02	6.78E-07	5.38E-06	6.78E-07
		Toluene	108-88-3	3.90E+00	5.61E-05	4.45E-04	5.61E-05
		Xylenes	1330-20-7	5.14E+00	7.39E-05	5.87E-04	7.39E-05

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
104	T25007	Benzene	71-43-2	4.85E+00	6.98E-05	5.54E-04	6.98E-05
		Ethyl Benzene	100-41-4	5.45E+00	7.83E-05	6.22E-04	7.83E-05
		Hexane	110-54-3	1.84E+01	2.64E-04	2.10E-03	2.65E-04
		Hydrogen Sulfide	7783-06-4	1.13E+01	1.62E-04	1.29E-03	1.62E-04
		Naphthalene	91-20-3	1.09E-01	1.57E-06	1.25E-05	1.57E-06
		Toluene	108-88-3	1.15E+01	1.65E-04	1.31E-03	1.65E-04
		Xylenes	1330-20-7	1.34E+01	1.92E-04	1.53E-03	1.92E-04
105	T25008	Benzene	71-43-2	3.79E-03	5.45E-08	4.33E-07	5.45E-08
		Ethyl Benzene	100-41-4	6.63E-03	9.53E-08	7.57E-07	9.54E-08
		Hexane	110-54-3	7.61E-04	1.09E-08	8.68E-08	1.09E-08
		Toluene	108-88-3	4.56E-02	6.55E-07	5.21E-06	6.56E-07
		Xylenes	1330-20-7	1.32E-01	1.90E-06	1.51E-05	1.90E-06
106	T25009	Benzene	71-43-2	7.98E-02	1.15E-06	9.10E-06	1.15E-06
		Ethyl Benzene	100-41-4	4.97E-01	7.15E-06	5.68E-05	7.15E-06
		Hexane	110-54-3	4.15E-02	5.97E-07	4.74E-06	5.97E-07
		Hydrogen Sulfide	7783-06-4	8.10E-02	1.16E-06	9.25E-06	1.17E-06
		Naphthalene	91-20-3	8.04E-02	1.16E-06	9.17E-06	1.16E-06
		Toluene	108-88-3	1.91E-01	2.75E-06	2.18E-05	2.75E-06
		Xylenes	1330-20-7	1.44E+00	2.07E-05	1.64E-04	2.07E-05
107	T2501	No emissions of toxics					
108	T3001	Benzene	71-43-2	1.81E+00	2.60E-05	2.07E-04	2.61E-05
		Ethyl Benzene	100-41-4	1.32E-01	1.90E-06	1.51E-05	1.90E-06
		Hexane	110-54-3	1.94E+00	2.78E-05	2.21E-04	2.79E-05
		Toluene	108-88-3	9.12E-01	1.31E-05	1.04E-04	1.31E-05
		Xylenes	1330-20-7	4.13E-01	5.93E-06	4.71E-05	5.94E-06
109	T35001	No emissions of toxics					
110	T3501	No emissions of toxics					
111	T50001	Benzene	71-43-2	6.07E+00	8.73E-05	6.93E-04	8.74E-05
		Ethyl Benzene	100-41-4	6.42E-01	9.22E-06	7.32E-05	9.23E-06
		Hexane	110-54-3	6.88E+00	9.89E-05	7.86E-04	9.90E-05
		Methanol	67-56-1	2.39E-01	3.44E-06	2.73E-05	3.44E-06

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Naphthalene	91-20-3	1.30E-01	1.87E-06	1.49E-05	1.87E-06
		Toluene	108-88-3	6.71E+00	9.65E-05	7.67E-04	9.66E-05
		Xylenes	1330-20-7	1.02E+01	1.46E-04	1.16E-03	1.46E-04
112	T50002	Benzene	71-43-2	7.53E-02	1.08E-06	8.60E-06	1.08E-06
		Ethyl Benzene	100-41-4	1.22E-01	1.75E-06	1.39E-05	1.75E-06
		Hexane	110-54-3	2.81E-01	4.03E-06	3.20E-05	4.04E-06
		Hydrogen Sulfide	7783-06-4	1.67E-01	2.40E-06	1.91E-05	2.41E-06
		Naphthalene	91-20-3	3.52E-02	5.05E-07	4.01E-06	5.06E-07
		Toluene	108-88-3	1.98E-01	2.84E-06	2.26E-05	2.85E-06
		Xylenes	1330-20-7	3.14E-01	4.51E-06	3.58E-05	4.51E-06
113	T50003	Benzene	71-43-2	1.12E+01	1.61E-04	1.28E-03	1.61E-04
		Ethyl Benzene	100-41-4	1.26E+01	1.81E-04	1.44E-03	1.81E-04
		Hexane	110-54-3	4.25E+01	6.10E-04	4.85E-03	6.11E-04
		Hydrogen Sulfide	7783-06-4	2.60E+01	3.74E-04	2.97E-03	3.74E-04
		Naphthalene	91-20-3	2.53E-01	3.63E-06	2.88E-05	3.63E-06
		Toluene	108-88-3	2.65E+01	3.81E-04	3.02E-03	3.81E-04
		Xylenes	1330-20-7	3.09E+01	4.44E-04	3.52E-03	4.44E-04
114	T50004	Benzene	71-43-2	6.28E+00	9.02E-05	7.17E-04	9.03E-05
		Ethyl Benzene	100-41-4	4.92E-01	7.07E-06	5.62E-05	7.08E-06
		Hexane	110-54-3	2.53E+01	3.63E-04	2.89E-03	3.64E-04
		Toluene	108-88-3	6.08E+00	8.74E-05	6.94E-04	8.75E-05
		Xylenes	1330-20-7	2.15E+00	3.09E-05	2.45E-04	3.09E-05
115	T50005	No emissions of toxics					
116	T50006	No emissions of toxics					
117	T50007	No emissions of toxics					
118	T50008	No emissions of toxics					
119	T5001	No emissions of toxics					
120	T5002	No emissions of toxics					
121	T5003	No emissions of toxics					
122	T5004	No emissions of toxics					
123	T5005	No emissions of toxics					

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
124	T5006	No emissions of toxics					
125	T5007	No emissions of toxics					
126	T509	No emissions of toxics					
127	T512	No emissions of toxics					
128	T513	No emissions of toxics					
129	T514	No emissions of toxics					
130	T5501	Benzene	71-43-2	5.58E-03	8.02E-08	6.37E-07	8.03E-08
		Ethyl Benzene	100-41-4	8.43E-03	1.21E-07	9.63E-07	1.21E-07
		Hexane	110-54-3	1.13E-03	1.62E-08	1.29E-07	1.62E-08
		Toluene	108-88-3	6.46E-02	9.28E-07	7.37E-06	9.29E-07
		Xylenes	1330-20-7	1.64E-01	2.36E-06	1.87E-05	2.36E-06
131	T6001	Benzene	71-43-2	9.58E-01	1.38E-05	1.09E-04	1.38E-05
		Ethyl Benzene	100-41-4	1.95E+00	2.80E-05	2.22E-04	2.80E-05
		Hexane	110-54-3	5.43E-01	7.80E-06	6.20E-05	7.81E-06
		Hydrogen Sulfide	7783-06-4	1.23E+00	1.77E-05	1.41E-04	1.78E-05
		Naphthalene	91-20-3	1.03E-02	1.48E-07	1.18E-06	1.49E-07
		Toluene	108-88-3	1.51E+00	2.17E-05	1.72E-04	2.17E-05
		Xylenes	1330-20-7	5.08E+00	7.30E-05	5.80E-04	7.30E-05
132	T6002	Benzene	71-43-2	9.54E-01	1.37E-05	1.09E-04	1.37E-05
		Ethyl Benzene	100-41-4	1.94E+00	2.78E-05	2.21E-04	2.79E-05
		Hexane	110-54-3	5.40E-01	7.77E-06	6.17E-05	7.77E-06
		Hydrogen Sulfide	7783-06-4	1.23E+00	1.77E-05	1.40E-04	1.77E-05
		Naphthalene	91-20-3	1.03E-02	1.48E-07	1.17E-06	1.48E-07
		Toluene	108-88-3	1.50E+00	2.16E-05	1.72E-04	2.16E-05
		Xylenes	1330-20-7	5.05E+00	7.26E-05	5.77E-04	7.27E-05
133	T776	No emissions of toxics					
134	T777	No emissions of toxics					
135	T80001	Benzene	71-43-2	7.81E-01	1.12E-05	8.92E-05	1.12E-05
		Ethyl Benzene	100-41-4	1.18E+00	1.70E-05	1.35E-04	1.70E-05
		Hexane	110-54-3	1.58E-01	2.26E-06	1.80E-05	2.27E-06
		Toluene	108-88-3	9.04E+00	1.30E-04	1.03E-03	1.30E-04

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes	1330-20-7	2.30E+01	3.31E-04	2.63E-03	3.31E-04
136	T80002	Benzene	71-43-2	1.29E+01	1.86E-04	1.48E-03	1.86E-04
		Ethyl Benzene	100-41-4	2.70E+00	3.88E-05	3.08E-04	3.88E-05
		Hexane	110-54-3	1.26E+01	1.82E-04	1.44E-03	1.82E-04
		Toluene	108-88-3	9.95E+00	1.43E-04	1.14E-03	1.43E-04
		Xylenes	1330-20-7	9.17E+00	1.32E-04	1.05E-03	1.32E-04
137	T80003	Benzene	71-43-2	1.28E+01	1.84E-04	1.46E-03	1.84E-04
		Ethyl Benzene	100-41-4	3.07E+00	4.41E-05	3.50E-04	4.41E-05
		Hexane	110-54-3	1.22E+01	1.76E-04	1.40E-03	1.76E-04
		Toluene	108-88-3	1.06E+01	1.53E-04	1.21E-03	1.53E-04
		Xylenes	1330-20-7	1.05E+01	1.51E-04	1.20E-03	1.51E-04
138	Pipe Fugitives from Tanks	PAHs	1151	1.01E-05	1.45E-10	1.16E-09	1.46E-10
		Formaldehyde	50-00-0	9.38E-09	1.35E-13	1.07E-12	1.35E-13
		Benzo(a)pyrene	50-32-8	4.45E-06	6.40E-11	5.07E-10	6.39E-11
		Dibenzo(a,h)anthracene	53-70-3	6.04E-07	8.68E-12	6.89E-11	8.68E-12
		Benzo(a)anthracene	56-55-3	1.83E-05	2.63E-10	2.08E-09	2.62E-10
		Benzene	71-43-2	9.85E-01	1.42E-05	1.12E-04	1.41E-05
		Acetaldehyde	75-07-0	4.42E-07	6.35E-12	5.04E-11	6.35E-12
		Naphthalene	91-20-3	3.66E-03	5.26E-08	4.18E-07	5.27E-08
		1,2,4-Trimethylbenzene	95-63-6	2.92E-01	4.20E-06	3.34E-05	4.21E-06
		Ethyl Benzene	100-41-4	6.00E-02	8.62E-07	6.85E-06	8.63E-07
		Acrolein	107-02-8	1.29E-07	1.85E-12	1.48E-11	1.86E-12
		Toluene	108-88-3	7.20E-01	1.03E-05	8.22E-05	1.04E-05
		Hexane	110-54-3	5.42E+00	7.79E-05	6.18E-04	7.79E-05
		Anthracene	120-12-7	1.28E-05	1.84E-10	1.46E-09	1.84E-10
		Benzo(b)fluoranthene	205-99-2	1.37E-05	1.97E-10	1.56E-09	1.97E-10
		Benzo(k)fluoranthene	207-08-9	1.71E-05	2.46E-10	1.95E-09	2.46E-10
		Chrysene	218-01-9	1.25E-05	1.80E-10	1.43E-09	1.80E-10
		Xylenes	1330-20-7	2.30E-01	3.31E-06	2.62E-05	3.30E-06
139	Wastewater Treatment	Benzene	71-43-2	9.04E-02	1.30E-06	1.03E-05	1.30E-06
		Naphthalene	91-20-3	7.15E-06	1.03E-10	8.16E-10	1.03E-10

Table C-3. Pre-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		1,2,4-Trimethylbenzene	95-63-6	1.10E-03	1.58E-08	1.26E-07	1.59E-08
		Ethyl Benzene	100-41-4	1.60E-03	2.29E-08	1.82E-07	2.29E-08
		Toluene	108-88-3	4.98E-02	7.15E-07	5.68E-06	7.16E-07
		Hexane	110-54-3	6.53E-01	9.38E-06	7.45E-05	9.39E-06
		Xylenes	1330-20-7	4.23E-03	6.09E-08	4.83E-07	6.09E-08
140	Middle Loop	Diesel Exhaust Particulate	9901	6.68E-02	9.60E-07	7.62E-06	9.61E-07
141	Northern Loop	Diesel Exhaust Particulate	9901	6.68E-02	9.60E-07	7.62E-06	9.61E-07
142	Onsite Railcar Mover	Diesel Exhaust Particulate	9901	5.84E+01	8.40E-04	6.67E-03	8.40E-04
143	Southern Loop	Diesel Exhaust Particulate	9901	6.68E-02	9.60E-07	7.62E-06	9.61E-07
144	Cooling Tower 500 Group	Benzene	71-43-2	3.47E-01	4.98E-06	3.96E-05	4.99E-06
		Ethyl Benzene	100-41-4	6.12E-03	8.80E-08	6.99E-07	8.81E-08
		Xylenes	1330-20-7	1.62E-02	2.33E-07	1.85E-06	2.34E-07
		Toluene	108-88-3	1.91E-01	2.74E-06	2.18E-05	2.74E-06
		Naphthalene	91-20-3	2.74E-05	3.94E-10	3.13E-09	3.94E-10
		Hexane	110-54-3	2.50E+00	3.60E-05	2.86E-04	3.60E-05
145	Cooling Tower 800 Group	Benzene	71-43-2	3.47E-01	4.98E-06	3.96E-05	4.99E-06
		Ethyl Benzene	100-41-4	6.12E-03	8.80E-08	6.99E-07	8.81E-08
		Xylenes	1330-20-7	1.62E-02	2.33E-07	1.85E-06	2.34E-07
		Toluene	108-88-3	1.91E-01	2.74E-06	2.18E-05	2.74E-06
		Naphthalene	91-20-3	2.74E-05	3.94E-10	3.13E-09	3.94E-10
		Hexane	110-54-3	2.50E+00	3.60E-05	2.86E-04	3.60E-05
146	UP Rail/Offsite Rail Mover	Diesel Exhaust Particulate	9901	3.21E+00	4.62E-05	4.02E-02	5.04E-03

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
B7	Boiler No. 7	2-Methyl naphthalene	91-57-6	9.17E-03	1.32E-07	1.05E-06	1.32E-07
		3-Methylcholanthrene	56-49-5	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	6.11E-03	8.80E-08	6.98E-07	8.79E-08
		Acenaphthene	83-32-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Acenaphthylene	208-96-8	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Acetaldehyde	75-07-0	1.18E+00	1.70E-05	1.35E-04	1.70E-05
		Acrolein	107-02-8	1.03E+00	1.48E-05	1.18E-04	1.48E-05
		Ammonia	7664-41-7	8.76E+02	1.26E-02	1.00E-01	1.26E-02
		Anthracene	120-12-7	9.17E-04	1.32E-08	1.05E-07	1.32E-08
		Benz[a]anthracene	56-55-3	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Benzene	71-43-2	2.22E+00	3.19E-05	2.53E-04	3.19E-05
		Benzo[a]pyrene	50-32-8	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Benzo[b]fluoranthene	205-99-2	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Benzo[g,h,i]perylene	191-24-2	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Benzo[k]fluoranthene	207-08-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Chrysene	218-01-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Dibenz[a,h]anthracene	53-70-3	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Ethyl benzene	100-41-4	2.64E+00	3.79E-05	3.01E-04	3.79E-05
		Fluoranthene	206-44-0	1.15E-03	1.65E-08	1.31E-07	1.65E-08
		Fluorene	86-73-7	1.07E-03	1.54E-08	1.22E-07	1.54E-08
		Formaldehyde	50-00-0	4.70E+00	6.76E-05	5.37E-04	6.76E-05
		Hexane	110-54-3	1.76E+00	2.53E-05	2.01E-04	2.53E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Naphthalene	91-20-3	1.15E-01	1.65E-06	1.31E-05	1.65E-06
		Phenanthrene	85-01-8	6.50E-03	9.35E-08	7.42E-07	9.35E-08
		Propylene	115-07-1	2.03E+02	2.91E-03	2.31E-02	2.91E-03
		Pyrene	129-00-0	1.91E-03	2.75E-08	2.18E-07	2.75E-08
		Sulfuric acid	7664-93-9	5.42E+02	7.80E-03	6.19E-02	7.80E-03

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	1.01E+01	1.46E-04	1.16E-03	1.46E-04
		Xylenes (mixed)	1330-20-7	7.53E+00	1.08E-04	8.59E-04	1.08E-04
B8	Boiler No. 8	2-Methyl naphthalene	91-57-6	9.17E-03	1.32E-07	1.05E-06	1.32E-07
		3-Methylcholanthrene	56-49-5	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	6.11E-03	8.80E-08	6.98E-07	8.79E-08
		Acenaphthene	83-32-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Acenaphthylene	208-96-8	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Acetaldehyde	75-07-0	1.18E+00	1.70E-05	1.35E-04	1.70E-05
		Acrolein	107-02-8	1.03E+00	1.48E-05	1.18E-04	1.48E-05
		Ammonia	7664-41-7	8.76E+02	1.26E-02	1.00E-01	1.26E-02
		Anthracene	120-12-7	9.17E-04	1.32E-08	1.05E-07	1.32E-08
		Benz[a]anthracene	56-55-3	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Benzene	71-43-2	2.22E+00	3.19E-05	2.53E-04	3.19E-05
		Benzo[a]pyrene	50-32-8	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Benzo[b]fluoranthene	205-99-2	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Benzo[g,h,i]perylene	191-24-2	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Benzo[k]fluoranthene	207-08-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Chrysene	218-01-9	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Dibenz[a,h]anthracene	53-70-3	4.59E-04	6.60E-09	5.24E-08	6.60E-09
		Ethyl benzene	100-41-4	2.64E+00	3.79E-05	3.01E-04	3.79E-05
		Fluoranthene	206-44-0	1.15E-03	1.65E-08	1.31E-07	1.65E-08
		Fluorene	86-73-7	1.07E-03	1.54E-08	1.22E-07	1.54E-08
		Formaldehyde	50-00-0	4.70E+00	6.76E-05	5.37E-04	6.76E-05
		Hexane	110-54-3	1.76E+00	2.53E-05	2.01E-04	2.53E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	6.88E-04	9.89E-09	7.85E-08	9.89E-09
		Naphthalene	91-20-3	1.15E-01	1.65E-06	1.31E-05	1.65E-06
		Phenanthrene	85-01-8	6.50E-03	9.35E-08	7.42E-07	9.35E-08
		Propylene	115-07-1	2.03E+02	2.91E-03	2.31E-02	2.91E-03

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Pyrene	129-00-0	1.91E-03	2.75E-08	2.18E-07	2.75E-08
		Sulfuric acid	7664-93-9	5.42E+02	7.80E-03	6.19E-02	7.80E-03
		Toluene	108-88-3	1.01E+01	1.46E-04	1.16E-03	1.46E-04
		Xylenes (mixed)	1330-20-7	7.53E+00	1.08E-04	8.59E-04	1.08E-04
B9	Boiler No. 9	2-Methyl naphthalene	91-57-6	1.36E-02	1.95E-07	1.55E-06	1.95E-07
		3-Methylcholanthrene	56-49-5	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		7,12-Dimethylbenz[a]anthracene	57-97-6	9.06E-03	1.30E-07	1.03E-06	1.30E-07
		Acenaphthene	83-32-9	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Acenaphthylene	208-96-8	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Acetaldehyde	75-07-0	1.75E+00	2.52E-05	2.00E-04	2.52E-05
		Acrolein	107-02-8	1.53E+00	2.20E-05	1.74E-04	2.20E-05
		Ammonia	7664-41-7	1.30E+03	1.87E-02	1.48E-01	1.87E-02
		Anthracene	120-12-7	1.36E-03	1.95E-08	1.55E-07	1.95E-08
		Benz[a]anthracene	56-55-3	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Benzene	71-43-2	3.28E+00	4.72E-05	3.75E-04	4.72E-05
		Benzo[a]pyrene	50-32-8	6.79E-04	9.77E-09	7.75E-08	9.77E-09
		Benzo[b]fluoranthene	205-99-2	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Benzo[g,h,i]perylene	191-24-2	6.79E-04	9.77E-09	7.75E-08	9.77E-09
		Benzo[k]fluoranthene	207-08-9	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Chrysene	218-01-9	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Dibenz[a,h]anthracene	53-70-3	6.79E-04	9.77E-09	7.75E-08	9.77E-09
		Ethyl benzene	100-41-4	3.91E+00	5.62E-05	4.46E-04	5.62E-05
		Fluoranthene	206-44-0	1.70E-03	2.44E-08	1.94E-07	2.44E-08
		Fluorene	86-73-7	1.58E-03	2.28E-08	1.81E-07	2.28E-08
		Formaldehyde	50-00-0	6.96E+00	1.00E-04	7.95E-04	1.00E-04
		Hexane	110-54-3	2.60E+00	3.74E-05	2.97E-04	3.74E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	1.02E-03	1.47E-08	1.16E-07	1.46E-08
		Naphthalene	91-20-3	1.70E-01	2.44E-06	1.94E-05	2.44E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Phenanthrene	85-01-8	9.62E-03	1.38E-07	1.10E-06	1.39E-07
		Propylene	115-07-1	3.00E+02	4.31E-03	3.42E-02	4.31E-03
		Pyrene	129-00-0	2.83E-03	4.07E-08	3.23E-07	4.07E-08
		Sulfuric acid	7664-93-9	8.03E+02	1.16E-02	9.17E-02	1.16E-02
		Toluene	108-88-3	1.50E+01	2.16E-04	1.71E-03	2.16E-04
		Xylenes (mixed)	1330-20-7	1.11E+01	1.60E-04	1.27E-03	1.60E-04
CT500	Cooling tower Y-500/501	1,2-Dichlorobenzene	95-50-1	1.66E-01	2.38E-06	1.89E-05	2.38E-06
		Ammonia	7664-41-7	5.95E+01	8.56E-04	6.79E-03	8.56E-04
		Hexane	110-54-3	8.28E+01	1.19E-03	9.45E-03	1.19E-03
		Hydrochloric acid	7647-01-0	8.28E-02	1.19E-06	9.45E-06	1.19E-06
		Hydrogen sulfide	7783-06-4	4.36E+01	6.27E-04	4.98E-03	6.27E-04
		Propylene	115-07-1	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes (mixed)	1330-20-7	3.31E-01	4.76E-06	3.78E-05	4.76E-06
CT800	Cooling tower Y-800/801/802	1,2-Dichlorobenzene	95-50-1	1.66E-01	2.38E-06	1.89E-05	2.38E-06
		Ammonia	7664-41-7	5.95E+01	8.56E-04	6.79E-03	8.56E-04
		Hexane	110-54-3	8.28E+01	1.19E-03	9.45E-03	1.19E-03
		Hydrochloric acid	7647-01-0	8.28E-02	1.19E-06	9.45E-06	1.19E-06
		Hydrogen sulfide	7783-06-4	4.36E+01	6.27E-04	4.98E-03	6.27E-04
		Propylene	115-07-1	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Xylenes (mixed)	1330-20-7	3.31E-01	4.76E-06	3.78E-05	4.76E-06
F_AB_HTR	Fugitive Components - Unit A and	1,2-Dichlorobenzene	95-50-1	1.32E+00	1.89E-05	1.50E-04	1.89E-05
		Hexane	110-54-3	3.56E+01	5.11E-04	4.06E-03	5.11E-04
		Hydrogen sulfide	7783-06-4	1.32E+00	1.89E-05	1.50E-04	1.89E-05
		Xylenes (mixed)	1330-20-7	2.63E+00	3.79E-05	3.01E-04	3.79E-05
F_AMFGT	Fugitive Components - Unit A	Hexane	110-54-3	1.48E+02	2.13E-03	1.69E-02	2.13E-03
		Hydrogen sulfide	7783-06-4	4.73E+01	6.80E-04	5.40E-03	6.80E-04
F_AMREG	Fugitive Components - Unit A	Hexane	110-54-3	3.04E+02	4.38E-03	3.47E-02	4.38E-03
		Hydrogen sulfide	7783-06-4	9.70E+01	1.40E-03	1.11E-02	1.40E-03

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
F_BAMINE	Fugitive Components - Unit B	Hexane	110-54-3	6.24E+02	8.97E-03	7.12E-02	8.97E-03
		Hydrogen sulfide	7783-06-4	1.99E+02	2.86E-03	2.27E-02	2.86E-03
F_BH2S	Fugitive Components - Unit B H2S	Ammonia	7664-41-7	5.22E+02	7.50E-03	5.95E-02	7.50E-03
		Hydrogen sulfide	7783-06-4	3.82E+02	5.50E-03	4.36E-02	5.50E-03
F_BLRS	Fugitive Components - Boilers	1,2-Dichlorobenzene	95-50-1	3.34E-01	4.80E-06	3.81E-05	4.80E-06
		Hexane	110-54-3	9.01E+00	1.30E-04	1.03E-03	1.30E-04
		Hydrogen sulfide	7783-06-4	3.34E-01	4.80E-06	3.81E-05	4.80E-06
		Xylenes (mixed)	1330-20-7	6.68E-01	9.60E-06	7.62E-05	9.60E-06
F_CAUSTC	Fugitive Components - Caustic	Hexane	110-54-3	1.25E+02	1.80E-03	1.42E-02	1.80E-03
		Hydrogen sulfide	7783-06-4	3.98E+01	5.72E-04	4.54E-03	5.72E-04
F_FGSYS	Fugitive Components - Fuel Gas	1,2-Dichlorobenzene	95-50-1	6.45E-01	9.28E-06	7.36E-05	9.27E-06
		Hexane	110-54-3	1.74E+01	2.51E-04	1.99E-03	2.51E-04
		Hydrogen sulfide	7783-06-4	6.45E-01	9.28E-06	7.36E-05	9.27E-06
		Xylenes (mixed)	1330-20-7	1.29E+00	1.86E-05	1.47E-04	1.86E-05
F_FL_VRS	Fugitive Components - Flare Vapor	1,2-Dichlorobenzene	95-50-1	2.25E+00	3.24E-05	2.57E-04	3.24E-05
		Hexane	110-54-3	6.08E+01	8.75E-04	6.94E-03	8.75E-04
		Hydrogen sulfide	7783-06-4	2.25E+00	3.24E-05	2.57E-04	3.24E-05
		Xylenes (mixed)	1330-20-7	4.51E+00	6.48E-05	5.14E-04	6.48E-05
F_FLARES	Fugitive Components - Refinery	1,2-Dichlorobenzene	95-50-1	8.57E-01	1.23E-05	9.78E-05	1.23E-05
		Hexane	110-54-3	2.31E+01	3.33E-04	2.64E-03	3.33E-04
		Hydrogen sulfide	7783-06-4	8.57E-01	1.23E-05	9.78E-05	1.23E-05
		Xylenes (mixed)	1330-20-7	1.71E+00	2.46E-05	1.96E-04	2.46E-05
F_H2GEN	Fugitive Components - Hydrogen	1,2-Dichlorobenzene	95-50-1	2.29E+00	3.29E-05	2.61E-04	3.29E-05
		Hexane	110-54-3	6.18E+01	8.88E-04	7.05E-03	8.88E-04
		Hydrogen sulfide	7783-06-4	2.29E+00	3.29E-05	2.61E-04	3.29E-05
		Propylene	115-07-1	2.42E+02	3.49E-03	2.77E-02	3.49E-03
		Xylenes (mixed)	1330-20-7	4.57E+00	6.58E-05	5.22E-04	6.58E-05
F_H2REF	Fugitive Components - Hydrogen	1,2-Dichlorobenzene	95-50-1	2.33E+00	3.35E-05	2.66E-04	3.35E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	6.29E+01	9.05E-04	7.18E-03	9.05E-04
		Hydrogen sulfide	7783-06-4	2.33E+00	3.35E-05	2.66E-04	3.35E-05
		Xylenes (mixed)	1330-20-7	4.66E+00	6.70E-05	5.32E-04	6.70E-05
F_INCIN	Fugitive Components - Incineration	Hexane	110-54-3	3.74E+02	5.39E-03	4.27E-02	5.39E-03
		Hydrogen sulfide	7783-06-4	1.19E+02	1.72E-03	1.36E-02	1.72E-03
F_INLN	Fugitive Components - In-Line	1,2,4-Trimethylbenzene	95-63-6	2.12E+02	3.05E-03	2.42E-02	3.05E-03
		2,2,4-Trimethylpentane	540-84-1	4.47E+02	6.43E-03	5.10E-02	6.43E-03
		Benzene	71-43-2	4.18E+01	6.01E-04	4.77E-03	6.01E-04
		Cumene	98-82-8	1.24E+00	1.78E-05	1.41E-04	1.78E-05
		Cyclohexane	110-82-7	1.58E+01	2.28E-04	1.81E-03	2.28E-04
		Ethyl benzene	100-41-4	2.93E+01	4.21E-04	3.34E-03	4.21E-04
		Hexane	110-54-3	2.15E+02	3.09E-03	2.45E-02	3.09E-03
		Methanol	67-56-1	1.30E+00	1.86E-05	1.48E-04	1.86E-05
		Naphthalene	91-20-3	1.36E+01	1.96E-04	1.55E-03	1.96E-04
		Toluene	108-88-3	1.38E+02	1.99E-03	1.58E-02	1.99E-03
		Xylenes (mixed)	1330-20-7	5.00E+02	7.20E-03	5.71E-02	7.20E-03
F_LPG	Fugitive Components - LPG Tank	1,2,4-Trimethylbenzene	95-63-6	3.89E+01	5.60E-04	4.44E-03	5.60E-04
		2,2,4-Trimethylpentane	540-84-1	8.20E+01	1.18E-03	9.36E-03	1.18E-03
		Benzene	71-43-2	7.68E+00	1.10E-04	8.76E-04	1.10E-04
		Cumene	98-82-8	2.27E-01	3.27E-06	2.60E-05	3.28E-06
		Cyclohexane	110-82-7	2.90E+00	4.18E-05	3.32E-04	4.18E-05
		Ethyl benzene	100-41-4	5.38E+00	7.73E-05	6.14E-04	7.73E-05
		Hexane	110-54-3	5.52E+00	7.94E-05	6.30E-04	7.94E-05
		Methanol	67-56-1	2.38E-01	3.42E-06	2.72E-05	3.43E-06
		Naphthalene	91-20-3	2.50E+00	3.59E-05	2.85E-04	3.59E-05
		Toluene	108-88-3	2.54E+01	3.65E-04	2.90E-03	3.65E-04
		Xylenes (mixed)	1330-20-7	9.19E+01	1.32E-03	1.05E-02	1.32E-03
F_LSS	Fugitive Components - Lift Station	1,2,4-Trimethylbenzene	95-63-6	5.63E-01	8.09E-06	6.42E-05	8.09E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		2,2,4-Trimethylpentane	540-84-1	5.55E-01	7.98E-06	6.34E-05	7.99E-06
		Benzene	71-43-2	1.76E-04	2.53E-09	2.00E-08	2.52E-09
		Cumene	98-82-8	1.67E-02	2.41E-07	1.91E-06	2.41E-07
		Cyclohexane	110-82-7	6.22E-02	8.95E-07	7.11E-06	8.96E-07
		Ethyl benzene	100-41-4	9.38E-02	1.35E-06	1.07E-05	1.35E-06
		Hexane	110-54-3	2.65E-01	3.81E-06	3.02E-05	3.81E-06
		Hydrogen sulfide	7783-06-4	3.92E-05	5.64E-10	4.47E-09	5.63E-10
		Isoprene, except from vegetative	78-79-5	7.20E-04	1.03E-08	8.21E-08	1.03E-08
		Methanol	67-56-1	1.56E-03	2.25E-08	1.78E-07	2.24E-08
		Naphthalene	91-20-3	4.52E-02	6.51E-07	5.16E-06	6.50E-07
		Toluene	108-88-3	1.93E-01	2.77E-06	2.20E-05	2.77E-06
		Xylenes (mixed)	1330-20-7	7.74E-01	1.11E-05	8.83E-05	1.11E-05
F_NAPH	Fugitive Components - Naphtha	Hexane	110-54-3	1.77E+02	2.54E-03	2.02E-02	2.54E-03
		Hydrogen sulfide	7783-06-4	1.06E+01	1.53E-04	1.21E-03	1.53E-04
F_NEW_FL	Fugitive Components - New Flare	1,2-Dichlorobenzene	95-50-1	8.57E-01	1.23E-05	9.78E-05	1.23E-05
		Hexane	110-54-3	2.31E+01	3.33E-04	2.64E-03	3.33E-04
		Hydrogen sulfide	7783-06-4	8.57E-01	1.23E-05	9.78E-05	1.23E-05
		Xylenes (mixed)	1330-20-7	1.71E+00	2.46E-05	1.96E-04	2.46E-05
F_NEWSW	Fugitive Components - New Sour	Ammonia	7664-41-7	2.38E+01	3.42E-04	2.71E-03	3.42E-04
		Hexane	110-54-3	6.79E-01	9.77E-06	7.75E-05	9.77E-06
		Hydrochloric acid	7647-01-0	4.07E-01	5.86E-06	4.65E-05	5.86E-06
		Hydrogen sulfide	7783-06-4	3.73E+00	5.37E-05	4.26E-04	5.37E-05
F_NWFVRS	Fugitive Components - New Flare	1,2-Dichlorobenzene	95-50-1	1.52E+00	2.19E-05	1.74E-04	2.19E-05
		Hexane	110-54-3	4.11E+01	5.91E-04	4.69E-03	5.91E-04
		Hydrogen sulfide	7783-06-4	1.52E+00	2.19E-05	1.74E-04	2.19E-05
		Xylenes (mixed)	1330-20-7	3.04E+00	4.38E-05	3.47E-04	4.38E-05
F_PIPEFL	Fugitive Components - Pipeline	1,2,4-Trimethylbenzene	95-63-6	4.61E+00	6.62E-05	5.26E-04	6.62E-05
		Benzene	71-43-2	3.68E-02	5.29E-07	4.20E-06	5.29E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cumene	98-82-8	2.17E-01	3.12E-06	2.48E-05	3.12E-06
		Cyclohexane	110-82-7	8.07E-01	1.16E-05	9.21E-05	1.16E-05
		Ethyl benzene	100-41-4	8.03E-01	1.16E-05	9.17E-05	1.16E-05
		Hexane	110-54-3	1.29E-02	1.85E-07	1.47E-06	1.85E-07
		Hydrogen sulfide	7783-06-4	2.62E-04	3.76E-09	2.99E-08	3.77E-09
		Isoprene, except from vegetative	78-79-5	1.84E-02	2.65E-07	2.10E-06	2.65E-07
		Naphthalene	91-20-3	1.73E-01	2.49E-06	1.98E-05	2.49E-06
		Toluene	108-88-3	2.00E-01	2.88E-06	2.29E-05	2.89E-06
		Xylenes (mixed)	1330-20-7	2.40E+00	3.46E-05	2.74E-04	3.46E-05
F_PRE_W	Fugitive Components - Pretreat	1,2,4-Trimethylbenzene	95-63-6	3.82E-01	5.49E-06	4.36E-05	5.49E-06
		2,2,4-Trimethylpentane	540-84-1	3.77E-01	5.42E-06	4.30E-05	5.42E-06
		Benzene	71-43-2	1.19E-04	1.71E-09	1.36E-08	1.71E-09
		Cumene	98-82-8	1.14E-02	1.63E-07	1.30E-06	1.64E-07
		Cyclohexane	110-82-7	4.22E-02	6.08E-07	4.82E-06	6.07E-07
		Ethyl benzene	100-41-4	6.37E-02	9.16E-07	7.27E-06	9.16E-07
		Hexane	110-54-3	1.80E-01	2.59E-06	2.05E-05	2.58E-06
		Hydrogen sulfide	7783-06-4	2.66E-05	3.83E-10	3.04E-09	3.83E-10
		Isoprene, except from vegetative	78-79-5	4.88E-04	7.02E-09	5.58E-08	7.03E-09
		Methanol	67-56-1	1.06E-03	1.53E-08	1.21E-07	1.52E-08
		Naphthalene	91-20-3	3.07E-02	4.42E-07	3.51E-06	4.42E-07
		Toluene	108-88-3	1.31E-01	1.88E-06	1.49E-05	1.88E-06
		Xylenes (mixed)	1330-20-7	5.25E-01	7.55E-06	5.99E-05	7.55E-06
F_PROPNE	Fugitive Components - Propane	Hexane	110-54-3	6.07E+02	8.74E-03	6.93E-02	8.74E-03
		Hydrogen sulfide	7783-06-4	3.64E+01	5.24E-04	4.16E-03	5.24E-04
F_R1_1A	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	6.95E-01	1.00E-05	7.93E-05	9.99E-06
		2,2,4-Trimethylpentane	540-84-1	8.85E-02	1.27E-06	1.01E-05	1.27E-06
		Benzene	71-43-2	1.23E-02	1.77E-07	1.40E-06	1.76E-07
		Cumene	98-82-8	3.69E-02	5.31E-07	4.21E-06	5.30E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cyclohexane	110-82-7	6.36E-02	9.15E-07	7.26E-06	9.15E-07
		Ethyl benzene	100-41-4	1.48E-01	2.13E-06	1.69E-05	2.13E-06
		Hexane	110-54-3	2.89E-02	4.15E-07	3.30E-06	4.16E-07
		Hydrogen sulfide	7783-06-4	1.58E-04	2.28E-09	1.81E-08	2.28E-09
		Naphthalene	91-20-3	1.21E-01	1.73E-06	1.38E-05	1.74E-06
		Toluene	108-88-3	1.01E-01	1.45E-06	1.15E-05	1.45E-06
		Xylenes (mixed)	1330-20-7	4.17E-01	6.00E-06	4.76E-05	6.00E-06
F_R12	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	2.20E+00	3.16E-05	2.51E-04	3.16E-05
		2,2,4-Trimethylpentane	540-84-1	2.80E-01	4.03E-06	3.20E-05	4.03E-06
		Benzene	71-43-2	3.89E-02	5.60E-07	4.44E-06	5.59E-07
		Cumene	98-82-8	1.17E-01	1.68E-06	1.33E-05	1.68E-06
		Cyclohexane	110-82-7	2.01E-01	2.90E-06	2.30E-05	2.90E-06
		Ethyl benzene	100-41-4	4.70E-01	6.75E-06	5.36E-05	6.75E-06
		Hexane	110-54-3	9.14E-02	1.31E-06	1.04E-05	1.31E-06
		Hydrogen sulfide	7783-06-4	5.01E-04	7.20E-09	5.72E-08	7.21E-09
		Naphthalene	91-20-3	3.82E-01	5.49E-06	4.36E-05	5.49E-06
		Toluene	108-88-3	3.18E-01	4.58E-06	3.63E-05	4.57E-06
		Xylenes (mixed)	1330-20-7	1.32E+00	1.90E-05	1.51E-04	1.90E-05
F_R18	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	4.84E+00	6.97E-05	5.53E-04	6.97E-05
		2,2,4-Trimethylpentane	540-84-1	4.78E+00	6.87E-05	5.45E-04	6.87E-05
		Benzene	71-43-2	4.66E-01	6.70E-06	5.32E-05	6.70E-06
		Cumene	98-82-8	1.44E-01	2.07E-06	1.64E-05	2.07E-06
		Cyclohexane	110-82-7	5.36E-01	7.71E-06	6.12E-05	7.71E-06
		Ethyl benzene	100-41-4	8.08E-01	1.16E-05	9.22E-05	1.16E-05
		Hexane	110-54-3	2.28E+00	3.28E-05	2.60E-04	3.28E-05
		Hydrogen sulfide	7783-06-4	3.37E-04	4.85E-09	3.85E-08	4.85E-09
		Isoprene, except from vegetative	78-79-5	6.19E-03	8.91E-08	7.07E-07	8.91E-08
		Methanol	67-56-1	1.35E-02	1.94E-07	1.54E-06	1.94E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Naphthalene	91-20-3	3.89E-01	5.60E-06	4.45E-05	5.61E-06
		Toluene	108-88-3	1.66E+00	2.39E-05	1.90E-04	2.39E-05
		Xylenes (mixed)	1330-20-7	6.66E+00	9.58E-05	7.60E-04	9.58E-05
F_R19	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	1.11E+01	1.59E-04	1.26E-03	1.59E-04
		Benzene	71-43-2	8.82E-02	1.27E-06	1.01E-05	1.27E-06
		Cumene	98-82-8	5.21E-01	7.49E-06	5.94E-05	7.48E-06
		Cyclohexane	110-82-7	1.94E+00	2.78E-05	2.21E-04	2.78E-05
		Ethyl benzene	100-41-4	1.93E+00	2.77E-05	2.20E-04	2.77E-05
		Hexane	110-54-3	3.09E-02	4.45E-07	3.53E-06	4.45E-07
		Hydrogen sulfide	7783-06-4	6.28E-04	9.03E-09	7.17E-08	9.03E-09
		Isoprene, except from vegetative	78-79-5	4.42E-02	6.36E-07	5.05E-06	6.36E-07
		Naphthalene	91-20-3	4.16E-01	5.98E-06	4.74E-05	5.97E-06
		Toluene	108-88-3	4.81E-01	6.92E-06	5.49E-05	6.92E-06
		Xylenes (mixed)	1330-20-7	5.76E+00	8.29E-05	6.58E-04	8.29E-05
F_R2	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	1.18E+01	1.70E-04	1.35E-03	1.70E-04
		2,2,4-Trimethylpentane	540-84-1	2.49E+01	3.58E-04	2.84E-03	3.58E-04
		Benzene	71-43-2	2.33E+00	3.35E-05	2.66E-04	3.35E-05
		Cumene	98-82-8	6.90E-02	9.93E-07	7.88E-06	9.93E-07
		Cyclohexane	110-82-7	8.82E-01	1.27E-05	1.01E-04	1.27E-05
		Ethyl benzene	100-41-4	1.63E+00	2.35E-05	1.86E-04	2.35E-05
		Hexane	110-54-3	1.20E+01	1.72E-04	1.37E-03	1.72E-04
		Methanol	67-56-1	7.22E-02	1.04E-06	8.24E-06	1.04E-06
		Naphthalene	91-20-3	7.58E-01	1.09E-05	8.65E-05	1.09E-05
		Toluene	108-88-3	7.70E+00	1.11E-04	8.79E-04	1.11E-04
		Xylenes (mixed)	1330-20-7	2.79E+01	4.01E-04	3.18E-03	4.01E-04
F_R20	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	5.73E+01	8.24E-04	6.54E-03	8.24E-04
		2,2,4-Trimethylpentane	540-84-1	1.21E+02	1.74E-03	1.38E-02	1.74E-03
		Benzene	71-43-2	1.13E+01	1.63E-04	1.29E-03	1.63E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cumene	98-82-8	3.35E-01	4.82E-06	3.82E-05	4.81E-06
		Cyclohexane	110-82-7	4.28E+00	6.15E-05	4.88E-04	6.15E-05
		Ethyl benzene	100-41-4	7.92E+00	1.14E-04	9.04E-04	1.14E-04
		Hexane	110-54-3	5.81E+01	8.35E-04	6.63E-03	8.35E-04
		Methanol	67-56-1	3.50E-01	5.04E-06	4.00E-05	5.04E-06
		Naphthalene	91-20-3	3.68E+00	5.29E-05	4.20E-04	5.29E-05
		Toluene	108-88-3	3.74E+01	5.37E-04	4.27E-03	5.37E-04
		Xylenes (mixed)	1330-20-7	1.35E+02	1.95E-03	1.54E-02	1.95E-03
F_R21	Fugitive Components -	1,2,4-Trimethylbenzene	95-63-6	4.24E+01	6.10E-04	4.84E-03	6.10E-04
		2,2,4-Trimethylpentane	540-84-1	8.94E+01	1.29E-03	1.02E-02	1.29E-03
		Benzene	71-43-2	8.37E+00	1.20E-04	9.55E-04	1.20E-04
		Cumene	98-82-8	2.48E-01	3.57E-06	2.83E-05	3.57E-06
		Cyclohexane	110-82-7	3.17E+00	4.55E-05	3.61E-04	4.55E-05
		Ethyl benzene	100-41-4	5.86E+00	8.43E-05	6.69E-04	8.43E-05
		Hexane	110-54-3	4.30E+01	6.18E-04	4.91E-03	6.18E-04
		Methanol	67-56-1	2.59E-01	3.73E-06	2.96E-05	3.73E-06
		Naphthalene	91-20-3	2.72E+00	3.92E-05	3.11E-04	3.92E-05
		Toluene	108-88-3	2.77E+01	3.98E-04	3.16E-03	3.98E-04
		Xylenes (mixed)	1330-20-7	1.00E+02	1.44E-03	1.14E-02	1.44E-03
F_R23	Fugitive Components - Gasoline	1,2,4-Trimethylbenzene	95-63-6	8.57E+00	1.23E-04	9.78E-04	1.23E-04
		2,2,4-Trimethylpentane	540-84-1	1.81E+01	2.60E-04	2.06E-03	2.60E-04
		Benzene	71-43-2	1.69E+00	2.43E-05	1.93E-04	2.43E-05
		Cumene	98-82-8	5.01E-02	7.20E-07	5.72E-06	7.21E-07
		Cyclohexane	110-82-7	6.40E-01	9.20E-06	7.30E-05	9.20E-06
		Ethyl benzene	100-41-4	1.18E+00	1.70E-05	1.35E-04	1.70E-05
		Hexane	110-54-3	8.69E+00	1.25E-04	9.92E-04	1.25E-04
		Methanol	67-56-1	5.24E-02	7.54E-07	5.98E-06	7.53E-07
		Naphthalene	91-20-3	5.50E-01	7.91E-06	6.28E-05	7.91E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	5.59E+00	8.04E-05	6.38E-04	8.04E-05
		Xylenes (mixed)	1330-20-7	2.02E+01	2.91E-04	2.31E-03	2.91E-04
F_R6	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	1.40E+01	2.01E-04	1.60E-03	2.01E-04
		Benzene	71-43-2	1.12E-01	1.61E-06	1.27E-05	1.60E-06
		Cumene	98-82-8	6.59E-01	9.48E-06	7.52E-05	9.48E-06
		Cyclohexane	110-82-7	2.45E+00	3.53E-05	2.80E-04	3.53E-05
		Ethyl benzene	100-41-4	2.44E+00	3.51E-05	2.78E-04	3.51E-05
		Hexane	110-54-3	3.92E-02	5.63E-07	4.47E-06	5.63E-07
		Hydrogen sulfide	7783-06-4	7.95E-04	1.14E-08	9.07E-08	1.14E-08
		Isoprene, except from vegetative	78-79-5	5.60E-02	8.05E-07	6.39E-06	8.05E-07
		Naphthalene	91-20-3	5.26E-01	7.57E-06	6.00E-05	7.56E-06
		Toluene	108-88-3	6.09E-01	8.76E-06	6.95E-05	8.76E-06
		Xylenes (mixed)	1330-20-7	7.30E+00	1.05E-04	8.33E-04	1.05E-04
F_R7	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	1.40E+01	2.01E-04	1.60E-03	2.01E-04
		Benzene	71-43-2	1.12E-01	1.61E-06	1.27E-05	1.60E-06
		Cumene	98-82-8	6.59E-01	9.48E-06	7.52E-05	9.48E-06
		Cyclohexane	110-82-7	2.45E+00	3.53E-05	2.80E-04	3.53E-05
		Ethyl benzene	100-41-4	2.44E+00	3.51E-05	2.78E-04	3.51E-05
		Hexane	110-54-3	3.92E-02	5.63E-07	4.47E-06	5.63E-07
		Hydrogen sulfide	7783-06-4	7.95E-04	1.14E-08	9.07E-08	1.14E-08
		Isoprene, except from vegetative	78-79-5	5.60E-02	8.05E-07	6.39E-06	8.05E-07
		Naphthalene	91-20-3	5.26E-01	7.57E-06	6.00E-05	7.56E-06
		Toluene	108-88-3	6.09E-01	8.76E-06	6.95E-05	8.76E-06
		Xylenes (mixed)	1330-20-7	7.30E+00	1.05E-04	8.33E-04	1.05E-04
F_R8	Fugitive Components - Tank Truck	1,2,4-Trimethylbenzene	95-63-6	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Benzene	71-43-2	8.27E-02	1.19E-06	9.44E-06	1.19E-06
		Cumene	98-82-8	4.88E-01	7.02E-06	5.57E-05	7.02E-06
		Cyclohexane	110-82-7	1.82E+00	2.61E-05	2.07E-04	2.61E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Ethyl benzene	100-41-4	1.81E+00	2.60E-05	2.06E-04	2.60E-05
		Hexane	110-54-3	2.90E-02	4.17E-07	3.31E-06	4.17E-07
		Hydrogen sulfide	7783-06-4	5.88E-04	8.46E-09	6.72E-08	8.47E-09
		Isoprene, except from vegetative	78-79-5	4.14E-02	5.96E-07	4.73E-06	5.96E-07
		Naphthalene	91-20-3	3.90E-01	5.60E-06	4.45E-05	5.61E-06
		Toluene	108-88-3	4.51E-01	6.49E-06	5.15E-05	6.49E-06
		Xylenes (mixed)	1330-20-7	5.40E+00	7.77E-05	6.17E-04	7.77E-05
F_RF_B	Fugitive Components - Renewable	Ammonia	7664-41-7	1.14E+01	1.64E-04	1.30E-03	1.64E-04
		Hexane	110-54-3	2.86E+03	4.11E-02	3.26E-01	4.11E-02
		Hydrochloric acid	7647-01-0	2.86E+00	4.11E-05	3.26E-04	4.11E-05
		Hydrogen sulfide	7783-06-4	5.43E+01	7.80E-04	6.19E-03	7.80E-04
F_RF1ST	Fugitive Components - Renewable	Ammonia	7664-41-7	9.94E+00	1.43E-04	1.14E-03	1.43E-04
		Hexane	110-54-3	2.49E+03	3.58E-02	2.84E-01	3.58E-02
		Hydrochloric acid	7647-01-0	2.49E+00	3.58E-05	2.84E-04	3.58E-05
		Hydrogen sulfide	7783-06-4	4.72E+01	6.79E-04	5.39E-03	6.79E-04
F_RF2ND	Fugitive Components - Renewable	Ammonia	7664-41-7	3.74E+00	5.38E-05	4.27E-04	5.38E-05
		Hexane	110-54-3	9.36E+02	1.35E-02	1.07E-01	1.35E-02
		Hydrochloric acid	7647-01-0	9.36E-01	1.35E-05	1.07E-04	1.35E-05
		Hydrogen sulfide	7783-06-4	1.78E+01	2.56E-04	2.03E-03	2.56E-04
F_SCR	Fugitive Components - SCR -	Ammonia	7664-41-7	3.07E+03	4.42E-02	3.51E-01	4.42E-02
F_SCRUB	Fugitive Components - SOx	Ammonia	7664-41-7	1.34E+02	1.93E-03	1.53E-02	1.93E-03
		Hydrogen sulfide	7783-06-4	9.81E+01	1.41E-03	1.12E-02	1.41E-03
F_SP3	Fugitive Components - Organic	1,2,4-Trimethylbenzene	95-63-6	2.90E+01	4.17E-04	3.31E-03	4.17E-04
		2,2,4-Trimethylpentane	540-84-1	4.41E+01	6.35E-04	5.04E-03	6.35E-04
		Benzene	71-43-2	4.18E+00	6.01E-05	4.77E-04	6.01E-05
		Cumene	98-82-8	5.06E-01	7.28E-06	5.78E-05	7.28E-06
		Cyclohexane	110-82-7	2.98E+00	4.29E-05	3.41E-04	4.29E-05
		Ethyl benzene	100-41-4	4.30E+00	6.19E-05	4.91E-04	6.19E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	3.03E+00	4.35E-05	3.46E-04	4.35E-05
		Hydrogen sulfide	7783-06-4	4.63E-04	6.66E-09	5.29E-08	6.67E-09
		Isoprene, except from vegetative	78-79-5	3.26E-02	4.69E-07	3.72E-06	4.69E-07
		Methanol	67-56-1	1.27E-01	1.83E-06	1.45E-05	1.83E-06
		Naphthalene	91-20-3	1.64E+00	2.36E-05	1.88E-04	2.36E-05
		Toluene	108-88-3	1.39E+01	2.01E-04	1.59E-03	2.01E-04
		Xylenes (mixed)	1330-20-7	5.35E+01	7.69E-04	6.10E-03	7.69E-04
F_SPCLAY	Fugitive Components -	Hexane	110-54-3	2.48E+02	3.57E-03	2.83E-02	3.57E-03
F_SPENT	Fugitive Components - Spent	Benzene	71-43-2	3.18E-05	4.57E-10	3.63E-09	4.57E-10
		Hexane	110-54-3	1.50E-06	2.16E-11	1.72E-10	2.17E-11
		Toluene	108-88-3	2.69E-04	3.87E-09	3.07E-08	3.87E-09
		Xylenes (mixed)	1330-20-7	3.78E-04	5.43E-09	4.31E-08	5.43E-09
F_SVE1	Fugitive Components - Soil Vapor	1,2-Dichlorobenzene	95-50-1	1.63E-01	2.34E-06	1.86E-05	2.34E-06
		Hexane	110-54-3	4.39E+00	6.31E-05	5.01E-04	6.31E-05
		Hydrogen sulfide	7783-06-4	1.63E-01	2.34E-06	1.86E-05	2.34E-06
		Xylenes (mixed)	1330-20-7	3.25E-01	4.68E-06	3.71E-05	4.67E-06
F_SVE234	Fugitive Components - Soil Vapor	1,2-Dichlorobenzene	95-50-1	1.24E-01	1.78E-06	1.41E-05	1.78E-06
		Hexane	110-54-3	3.34E+00	4.81E-05	3.82E-04	4.81E-05
		Hydrogen sulfide	7783-06-4	1.24E-01	1.78E-06	1.41E-05	1.78E-06
		Xylenes (mixed)	1330-20-7	2.48E-01	3.56E-06	2.83E-05	3.57E-06
F_SVE5	Fugitive Components - Soil Vapor	1,2-Dichlorobenzene	95-50-1	2.46E-02	3.53E-07	2.80E-06	3.53E-07
		Hexane	110-54-3	6.63E-01	9.54E-06	7.57E-05	9.54E-06
		Hydrogen sulfide	7783-06-4	2.46E-02	3.53E-07	2.80E-06	3.53E-07
		Xylenes (mixed)	1330-20-7	4.91E-02	7.07E-07	5.61E-06	7.07E-07
F_SWS	Fugitive Components - Units A & B	Ammonia	7664-41-7	1.10E+02	1.59E-03	1.26E-02	1.59E-03
		Hydrogen sulfide	7783-06-4	8.09E+01	1.16E-03	9.24E-03	1.16E-03
F_UA_SOX	Fugitive Components - Unit A SOx	1,2-Dichlorobenzene	95-50-1	1.15E+00	1.66E-05	1.32E-04	1.66E-05
		Hexane	110-54-3	3.11E+01	4.48E-04	3.55E-03	4.48E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hydrogen sulfide	7783-06-4	1.15E+00	1.66E-05	1.32E-04	1.66E-05
		Xylenes (mixed)	1330-20-7	2.31E+00	3.32E-05	2.63E-04	3.32E-05
F_VR	Fugitive Components - Vapor	1,2,4-Trimethylbenzene	95-63-6	3.86E-01	5.55E-06	6.30E-05	7.94E-06
		2,2,4-Trimethylpentane	540-84-1	2.16E+01	3.11E-04	3.22E-03	4.06E-04
		Benzene	71-43-2	3.94E+00	5.67E-05	5.81E-04	7.33E-05
		Cumene	98-82-8	5.17E-03	7.44E-08	8.27E-07	1.04E-07
		Cyclohexane	110-82-7	1.54E+00	2.21E-05	2.25E-04	2.84E-05
		Ethyl benzene	100-41-4	2.59E-01	3.73E-06	4.06E-05	5.12E-06
		Hexane	110-54-3	3.27E+01	4.70E-04	4.74E-03	5.98E-04
		Methanol	67-56-1	1.58E-01	2.28E-06	2.40E-05	3.02E-06
		Naphthalene	91-20-3	3.02E-03	4.35E-08	5.15E-07	6.49E-08
		Toluene	108-88-3	3.79E+00	5.45E-05	5.74E-04	7.23E-05
		Xylenes (mixed)	1330-20-7	3.87E+00	5.56E-05	6.07E-04	7.65E-05
F_VR_NEW	Fugitive Components - New Vapor	1,2,4-Trimethylbenzene	95-63-6	3.50E-01	5.03E-06	5.71E-05	7.19E-06
		2,2,4-Trimethylpentane	540-84-1	9.20E+00	1.32E-04	1.37E-03	1.72E-04
		Benzene	71-43-2	1.75E+00	2.51E-05	2.57E-04	3.24E-05
		Cumene	98-82-8	2.39E-02	3.43E-07	3.81E-06	4.80E-07
		Cyclohexane	110-82-7	2.07E+00	2.98E-05	3.03E-04	3.82E-05
		Ethyl benzene	100-41-4	2.84E-01	4.09E-06	4.44E-05	5.59E-06
		Hexane	110-54-3	1.38E+01	1.98E-04	2.00E-03	2.52E-04
		Hydrogen sulfide	7783-06-4	2.27E-01	3.26E-06	2.98E-05	3.75E-06
		Isoprene, except from vegetative	78-79-5	1.41E-01	2.03E-06	1.98E-05	2.49E-06
		Methanol	67-56-1	6.53E-02	9.40E-07	9.91E-06	1.25E-06
		Naphthalene	91-20-3	3.43E-03	4.93E-08	5.83E-07	7.35E-08
		Toluene	108-88-3	1.81E+00	2.60E-05	2.74E-04	3.45E-05
		Xylenes (mixed)	1330-20-7	2.04E+00	2.94E-05	3.20E-04	4.04E-05
F_WW_CR	Fugitive Components - Wastewater	1,2,4-Trimethylbenzene	95-63-6	2.89E+00	4.16E-05	3.30E-04	4.16E-05
		2,2,4-Trimethylpentane	540-84-1	2.85E+00	4.10E-05	3.26E-04	4.10E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	9.02E-04	1.30E-08	1.03E-07	1.30E-08
		Cumene	98-82-8	8.59E-02	1.24E-06	9.81E-06	1.24E-06
		Cyclohexane	110-82-7	3.20E-01	4.60E-06	3.65E-05	4.60E-06
		Ethyl benzene	100-41-4	4.82E-01	6.94E-06	5.50E-05	6.93E-06
		Hexane	110-54-3	1.36E+00	1.96E-05	1.55E-04	1.96E-05
		Hydrogen sulfide	7783-06-4	2.01E-04	2.90E-09	2.30E-08	2.90E-09
		Isoprene, except from vegetative	78-79-5	3.70E-03	5.32E-08	4.22E-07	5.32E-08
		Methanol	67-56-1	8.03E-03	1.16E-07	9.17E-07	1.16E-07
		Naphthalene	91-20-3	2.32E-01	3.34E-06	2.65E-05	3.34E-06
		Toluene	108-88-3	9.91E-01	1.43E-05	1.13E-04	1.43E-05
		Xylenes (mixed)	1330-20-7	3.98E+00	5.72E-05	4.54E-04	5.72E-05
F_WW_HY	Fugitive Components - Wastewater	1,2,4-Trimethylbenzene	95-63-6	6.67E+00	9.59E-05	7.61E-04	9.59E-05
		2,2,4-Trimethylpentane	540-84-1	6.58E+00	9.46E-05	7.51E-04	9.46E-05
		Benzene	71-43-2	2.08E-03	2.99E-08	2.37E-07	2.99E-08
		Cumene	98-82-8	1.98E-01	2.85E-06	2.26E-05	2.85E-06
		Cyclohexane	110-82-7	7.37E-01	1.06E-05	8.42E-05	1.06E-05
		Ethyl benzene	100-41-4	1.11E+00	1.60E-05	1.27E-04	1.60E-05
		Hexane	110-54-3	3.14E+00	4.51E-05	3.58E-04	4.51E-05
		Hydrogen sulfide	7783-06-4	4.64E-04	6.68E-09	5.30E-08	6.68E-09
		Isoprene, except from vegetative	78-79-5	8.53E-03	1.23E-07	9.73E-07	1.23E-07
		Methanol	67-56-1	1.85E-02	2.66E-07	2.11E-06	2.66E-07
		Naphthalene	91-20-3	5.36E-01	7.71E-06	6.12E-05	7.71E-06
		Toluene	108-88-3	2.29E+00	3.29E-05	2.61E-04	3.29E-05
		Xylenes (mixed)	1330-20-7	9.17E+00	1.32E-04	1.05E-03	1.32E-04
FUGT1000	Tank 1000 piping component	Benzene	71-43-2	2.50E-04	3.59E-09	2.85E-08	3.59E-09
		Hexane	110-54-3	1.18E-05	1.70E-10	1.35E-09	1.70E-10
		Toluene	108-88-3	2.12E-03	3.04E-08	2.42E-07	3.05E-08
		Xylenes (mixed)	1330-20-7	2.97E-03	4.27E-08	3.39E-07	4.27E-08

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
FUGTKFM2	Tank Farm TF-02 piping component	1,2,4-Trimethylbenzene	95-63-6	3.24E+02	4.65E-03	3.69E-02	4.65E-03
		2,2,4-Trimethylpentane	540-84-1	5.09E+02	7.32E-03	5.81E-02	7.32E-03
		Benzene	71-43-2	4.82E+01	6.93E-04	5.50E-03	6.93E-04
		Cumene	98-82-8	5.28E+00	7.60E-05	6.03E-04	7.60E-05
		Cyclohexane	110-82-7	3.24E+01	4.66E-04	3.70E-03	4.66E-04
		Ethyl benzene	100-41-4	4.77E+01	6.86E-04	5.44E-03	6.86E-04
		Hexane	110-54-3	2.45E+02	3.52E-03	2.80E-02	3.52E-03
		Hydrogen sulfide	7783-06-4	4.71E-03	6.78E-08	5.38E-07	6.78E-08
		Isoprene, except from vegetative	78-79-5	3.27E-01	4.71E-06	3.73E-05	4.70E-06
		Methanol	67-56-1	1.48E+00	2.12E-05	1.69E-04	2.12E-05
		Naphthalene	91-20-3	1.86E+01	2.68E-04	2.13E-03	2.68E-04
		Toluene	108-88-3	1.61E+02	2.32E-03	1.84E-02	2.32E-03
		Xylenes (mixed)	1330-20-7	6.13E+02	8.82E-03	7.00E-02	8.82E-03
FUGTKFM3	Tank Farm TF-03 piping component	1,2,4-Trimethylbenzene	95-63-6	2.14E+02	3.08E-03	2.44E-02	3.08E-03
		2,2,4-Trimethylpentane	540-84-1	4.08E+02	5.87E-03	4.66E-02	5.87E-03
		Benzene	71-43-2	3.84E+01	5.52E-04	4.38E-03	5.52E-04
		Cumene	98-82-8	2.09E+00	3.01E-05	2.39E-04	3.01E-05
		Cyclohexane	110-82-7	1.80E+01	2.59E-04	2.06E-03	2.59E-04
		Ethyl benzene	100-41-4	3.03E+01	4.36E-04	3.46E-03	4.36E-04
		Hexane	110-54-3	1.96E+02	2.82E-03	2.24E-02	2.82E-03
		Hydrogen sulfide	7783-06-4	1.16E-03	1.67E-08	1.33E-07	1.68E-08
		Isoprene, except from vegetative	78-79-5	8.18E-02	1.18E-06	9.33E-06	1.18E-06
		Methanol	67-56-1	1.18E+00	1.70E-05	1.35E-04	1.70E-05
		Naphthalene	91-20-3	1.32E+01	1.90E-04	1.51E-03	1.90E-04
		Toluene	108-88-3	1.27E+02	1.83E-03	1.45E-02	1.83E-03
		Xylenes (mixed)	1330-20-7	4.68E+02	6.73E-03	5.34E-02	6.73E-03
FUGTKFM4	Tank Farm TF-04 piping component	1,2,4-Trimethylbenzene	95-63-6	2.57E+01	3.70E-04	2.93E-03	3.70E-04
		2,2,4-Trimethylpentane	540-84-1	2.54E+01	3.65E-04	2.89E-03	3.65E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	2.47E+00	3.56E-05	2.82E-04	3.56E-05
		Cumene	98-82-8	7.64E-01	1.10E-05	8.72E-05	1.10E-05
		Cyclohexane	110-82-7	2.84E+00	4.09E-05	3.25E-04	4.09E-05
		Ethyl benzene	100-41-4	4.29E+00	6.17E-05	4.89E-04	6.17E-05
		Hexane	110-54-3	1.21E+01	1.74E-04	1.38E-03	1.74E-04
		Hydrogen sulfide	7783-06-4	1.79E-03	2.57E-08	2.04E-07	2.57E-08
		Isoprene, except from vegetative	78-79-5	3.29E-02	4.73E-07	3.75E-06	4.73E-07
		Methanol	67-56-1	7.14E-02	1.03E-06	8.15E-06	1.03E-06
		Naphthalene	91-20-3	2.07E+00	2.97E-05	2.36E-04	2.97E-05
		Toluene	108-88-3	8.81E+00	1.27E-04	1.01E-03	1.27E-04
		Xylenes (mixed)	1330-20-7	3.53E+01	5.08E-04	4.03E-03	5.08E-04
FUGTKFM5	Tank Farm TF-05 piping component	1,2,4-Trimethylbenzene	95-63-6	1.71E+02	2.46E-03	1.95E-02	2.46E-03
		2,2,4-Trimethylpentane	540-84-1	1.02E+02	1.47E-03	1.16E-02	1.47E-03
		Benzene	71-43-2	1.05E+01	1.51E-04	1.20E-03	1.51E-04
		Cumene	98-82-8	6.06E+00	8.71E-05	6.92E-04	8.71E-05
		Cyclohexane	110-82-7	2.51E+01	3.61E-04	2.86E-03	3.61E-04
		Ethyl benzene	100-41-4	2.81E+01	4.04E-04	3.20E-03	4.04E-04
		Hexane	110-54-3	4.94E+01	7.10E-04	5.64E-03	7.10E-04
		Hydrogen sulfide	7783-06-4	6.96E-03	1.00E-07	7.95E-07	1.00E-07
		Isoprene, except from vegetative	78-79-5	4.90E-01	7.05E-06	5.60E-05	7.06E-06
		Methanol	67-56-1	2.96E-01	4.25E-06	3.38E-05	4.26E-06
		Naphthalene	91-20-3	7.71E+00	1.11E-04	8.81E-04	1.11E-04
		Toluene	108-88-3	3.69E+01	5.30E-04	4.21E-03	5.30E-04
		Xylenes (mixed)	1330-20-7	1.78E+02	2.56E-03	2.03E-02	2.56E-03
FUGTKFM7	Tank Farm TF-07 piping component	1,2,4-Trimethylbenzene	95-63-6	8.71E+01	1.25E-03	9.95E-03	1.25E-03
		2,2,4-Trimethylpentane	540-84-1	1.45E+02	2.08E-03	1.65E-02	2.08E-03
		Benzene	71-43-2	1.37E+01	1.97E-04	1.56E-03	1.97E-04
		Cumene	98-82-8	1.39E+00	2.00E-05	1.59E-04	2.00E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cyclohexane	110-82-7	7.26E+00	1.04E-04	8.29E-04	1.04E-04
		Ethyl benzene	100-41-4	1.33E+01	1.91E-04	1.52E-03	1.91E-04
		Hexane	110-54-3	6.93E+01	9.97E-04	7.91E-03	9.97E-04
		Hydrogen sulfide	7783-06-4	3.53E-03	5.08E-08	4.03E-07	5.08E-08
		Isoprene, except from vegetative	78-79-5	2.04E-02	2.94E-07	2.33E-06	2.94E-07
		Methanol	67-56-1	4.14E-01	5.96E-06	4.73E-05	5.96E-06
		Naphthalene	91-20-3	7.01E+00	1.01E-04	8.01E-04	1.01E-04
		Toluene	108-88-3	4.65E+01	6.68E-04	5.30E-03	6.68E-04
		Xylenes (mixed)	1330-20-7	1.71E+02	2.46E-03	1.95E-02	2.46E-03
FUGTKFM9	Tank Farm TF-09 piping component	1,2,4-Trimethylbenzene	95-63-6	2.57E+00	3.70E-05	2.93E-04	3.70E-05
		2,2,4-Trimethylpentane	540-84-1	2.54E+00	3.65E-05	2.89E-04	3.65E-05
		Benzene	71-43-2	8.02E-04	1.15E-08	9.16E-08	1.15E-08
		Cumene	98-82-8	7.64E-02	1.10E-06	8.72E-06	1.10E-06
		Cyclohexane	110-82-7	2.84E-01	4.09E-06	3.25E-05	4.10E-06
		Ethyl benzene	100-41-4	4.29E-01	6.17E-06	4.89E-05	6.16E-06
		Hexane	110-54-3	1.21E+00	1.74E-05	1.38E-04	1.74E-05
		Hydrogen sulfide	7783-06-4	1.79E-04	2.57E-09	2.04E-08	2.57E-09
		Isoprene, except from vegetative	78-79-5	3.29E-03	4.73E-08	3.75E-07	4.73E-08
		Methanol	67-56-1	7.14E-03	1.03E-07	8.15E-07	1.03E-07
		Naphthalene	91-20-3	2.07E-01	2.97E-06	2.36E-05	2.97E-06
		Toluene	108-88-3	8.81E-01	1.27E-05	1.01E-04	1.27E-05
		Xylenes (mixed)	1330-20-7	3.53E+00	5.08E-05	4.03E-04	5.08E-05
H101	Heater 101	2-Methyl naphthalene	91-57-6	2.64E-03	3.79E-08	3.01E-07	3.79E-08
		3-Methylcholanthrene	56-49-5	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	1.76E-03	2.53E-08	2.01E-07	2.53E-08
		Acenaphthene	83-32-9	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Acenaphthylene	208-96-8	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Acetaldehyde	75-07-0	3.41E-01	4.90E-06	3.89E-05	4.90E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Acrolein	107-02-8	2.97E-01	4.27E-06	3.39E-05	4.27E-06
		Ammonia	7664-41-7	2.52E+02	3.62E-03	2.88E-02	3.62E-03
		Anthracene	120-12-7	2.64E-04	3.79E-09	3.01E-08	3.79E-09
		Benz[a]anthracene	56-55-3	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Benzene	71-43-2	6.38E-01	9.17E-06	7.28E-05	9.17E-06
		Benzo[a]pyrene	50-32-8	1.32E-04	1.90E-09	1.51E-08	1.90E-09
		Benzo[b]fluoranthene	205-99-2	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Benzo[g,h,i]perylene	191-24-2	1.32E-04	1.90E-09	1.51E-08	1.90E-09
		Benzo[k]fluoranthene	207-08-9	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Chrysene	218-01-9	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Dibenz[a,h]anthracene	53-70-3	1.32E-04	1.90E-09	1.51E-08	1.90E-09
		Ethyl benzene	100-41-4	7.59E-01	1.09E-05	8.66E-05	1.09E-05
		Fluoranthene	206-44-0	3.30E-04	4.74E-09	3.76E-08	4.74E-09
		Fluorene	86-73-7	3.08E-04	4.43E-09	3.51E-08	4.42E-09
		Formaldehyde	50-00-0	1.35E+00	1.94E-05	1.54E-04	1.94E-05
		Hexane	110-54-3	5.06E-01	7.27E-06	5.77E-05	7.27E-06
		Indeno[1,2,3-cd]pyrene	193-39-5	1.98E-04	2.85E-09	2.26E-08	2.85E-09
		Naphthalene	91-20-3	3.30E-02	4.74E-07	3.76E-06	4.74E-07
		Phenanthrene	85-01-8	1.87E-03	2.69E-08	2.13E-07	2.68E-08
		Propylene	115-07-1	5.83E+01	8.38E-04	6.65E-03	8.38E-04
		Pyrene	129-00-0	5.50E-04	7.91E-09	6.27E-08	7.90E-09
		Sulfuric acid	7664-93-9	1.00E+02	1.44E-03	1.14E-02	1.44E-03
		Toluene	108-88-3	2.91E+00	4.19E-05	3.33E-04	4.19E-05
		Xylenes (mixed)	1330-20-7	2.17E+00	3.11E-05	2.47E-04	3.11E-05
H102	Heater 102	2-Methyl naphthalene	91-57-6	4.58E-03	6.58E-08	5.22E-07	6.58E-08
		3-Methylcholanthrene	56-49-5	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	3.05E-03	4.39E-08	3.48E-07	4.38E-08
		Acenaphthene	83-32-9	3.43E-04	4.94E-09	3.92E-08	4.94E-09

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Acenaphthylene	208-96-8	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Acetaldehyde	75-07-0	5.91E-01	8.50E-06	6.75E-05	8.51E-06
		Acrolein	107-02-8	5.15E-01	7.40E-06	5.88E-05	7.41E-06
		Ammonia	7664-41-7	4.37E+02	6.29E-03	4.99E-02	6.29E-03
		Anthracene	120-12-7	4.58E-04	6.58E-09	5.22E-08	6.58E-09
		Benz[a]anthracene	56-55-3	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Benzene	71-43-2	1.11E+00	1.59E-05	1.26E-04	1.59E-05
		Benzo[a]pyrene	50-32-8	2.29E-04	3.29E-09	2.61E-08	3.29E-09
		Benzo[b]fluoranthene	205-99-2	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Benzo[g,h,i]perylene	191-24-2	2.29E-04	3.29E-09	2.61E-08	3.29E-09
		Benzo[k]fluoranthene	207-08-9	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Chrysene	218-01-9	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Dibenz[a,h]anthracene	53-70-3	2.29E-04	3.29E-09	2.61E-08	3.29E-09
		Ethyl benzene	100-41-4	1.32E+00	1.89E-05	1.50E-04	1.89E-05
		Fluoranthene	206-44-0	5.72E-04	8.23E-09	6.53E-08	8.23E-09
		Fluorene	86-73-7	5.34E-04	7.68E-09	6.09E-08	7.67E-09
		Formaldehyde	50-00-0	2.35E+00	3.37E-05	2.68E-04	3.37E-05
		Hexane	110-54-3	8.77E-01	1.26E-05	1.00E-04	1.26E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	3.43E-04	4.94E-09	3.92E-08	4.94E-09
		Naphthalene	91-20-3	5.72E-02	8.23E-07	6.53E-06	8.23E-07
		Phenanthrene	85-01-8	3.24E-03	4.66E-08	3.70E-07	4.66E-08
		Propylene	115-07-1	1.01E+02	1.45E-03	1.15E-02	1.45E-03
		Pyrene	129-00-0	9.53E-04	1.37E-08	1.09E-07	1.37E-08
		Sulfuric acid	7664-93-9	1.74E+02	2.50E-03	1.98E-02	2.50E-03
		Toluene	108-88-3	5.05E+00	7.27E-05	5.77E-04	7.27E-05
		Xylenes (mixed)	1330-20-7	3.76E+00	5.40E-05	4.29E-04	5.40E-05
H151	Heater H-151 (H2 plant)	2-Methyl naphthalene	91-57-6	1.24E-01	1.78E-06	1.41E-05	1.78E-06
		3-Methylcholanthrene	56-49-5	9.28E-03	1.33E-07	1.06E-06	1.34E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		7,12-Dimethylbenz[a]anthracene	57-97-6	8.24E-02	1.19E-06	9.41E-06	1.19E-06
		Acenaphthene	83-32-9	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Acenaphthylene	208-96-8	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Acetaldehyde	75-07-0	4.64E+00	6.67E-05	5.29E-04	6.67E-05
		Acrolein	107-02-8	4.12E+00	5.93E-05	4.71E-04	5.93E-05
		Ammonia	7664-41-7	1.35E+04	1.94E-01	1.54E+00	1.94E-01
		Anthracene	120-12-7	1.24E-02	1.78E-07	1.41E-06	1.78E-07
		Benz[a]anthracene	56-55-3	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Benzene	71-43-2	8.76E+00	1.26E-04	1.00E-03	1.26E-04
		Benzo[a]pyrene	50-32-8	6.18E-03	8.89E-08	7.06E-07	8.90E-08
		Benzo[b]fluoranthene	205-99-2	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Benzo[g,h,i]perylene	191-24-2	6.18E-03	8.89E-08	7.06E-07	8.90E-08
		Benzo[k]fluoranthene	207-08-9	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Chrysene	218-01-9	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Dibenz[a,h]anthracene	53-70-3	6.18E-03	8.89E-08	7.06E-07	8.90E-08
		Ethyl benzene	100-41-4	1.03E+01	1.48E-04	1.18E-03	1.48E-04
		Fluoranthene	206-44-0	1.55E-02	2.22E-07	1.76E-06	2.22E-07
		Fluorene	86-73-7	1.44E-02	2.08E-07	1.65E-06	2.08E-07
		Formaldehyde	50-00-0	1.86E+01	2.67E-04	2.12E-03	2.67E-04
		Hexane	110-54-3	6.70E+00	9.64E-05	7.65E-04	9.64E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	9.28E-03	1.33E-07	1.06E-06	1.34E-07
		Naphthalene	91-20-3	1.55E+00	2.22E-05	1.76E-04	2.22E-05
		Phenanthrene	85-01-8	8.76E-02	1.26E-06	1.00E-05	1.26E-06
		Propylene	115-07-1	8.00E+01	1.15E-03	9.14E-03	1.15E-03
		Pyrene	129-00-0	2.58E-02	3.71E-07	2.94E-06	3.70E-07
		Sulfuric acid	7664-93-9	1.28E+03	1.84E-02	1.45E-01	1.83E-02
		Toluene	108-88-3	4.02E+01	5.78E-04	4.59E-03	5.78E-04
		Xylenes (mixed)	1330-20-7	2.99E+01	4.30E-04	3.41E-03	4.30E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
H2VENT	H2 Plant Venting (same stack as H-	Ammonia	7664-41-7	6.34E+00	9.11E-05	7.23E-04	9.11E-05
		Hexane	110-54-3	8.14E+00	1.17E-04	9.30E-04	1.17E-04
		Methanol	67-56-1	3.22E+03	4.63E-02	3.68E-01	4.63E-02
H350	Heater H-350 (vents to SCR	2-Methyl naphthalene	91-57-6	1.24E-02	1.78E-07	1.41E-06	1.78E-07
		3-Methylcholanthrene	56-49-5	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		7,12-Dimethylbenz[a]anthracene	57-97-6	8.24E-03	1.19E-07	9.41E-07	1.19E-07
		Acenaphthene	83-32-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Acenaphthylene	208-96-8	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Acetaldehyde	75-07-0	1.60E+00	2.30E-05	1.82E-04	2.30E-05
		Acrolein	107-02-8	1.39E+00	2.00E-05	1.59E-04	2.00E-05
		Ammonia	7664-41-7	1.18E+03	1.70E-02	1.35E-01	1.70E-02
		Anthracene	120-12-7	1.24E-03	1.78E-08	1.41E-07	1.78E-08
		Benz[a]anthracene	56-55-3	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Benzene	71-43-2	2.99E+00	4.30E-05	3.41E-04	4.30E-05
		Benzo[a]pyrene	50-32-8	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Benzo[b]fluoranthene	205-99-2	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Benzo[g,h,i]perylene	191-24-2	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Benzo[k]fluoranthene	207-08-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Chrysene	218-01-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Dibenz[a,h]anthracene	53-70-3	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Ethyl benzene	100-41-4	3.56E+00	5.11E-05	4.06E-04	5.11E-05
		Fluoranthene	206-44-0	1.55E-03	2.22E-08	1.76E-07	2.22E-08
		Fluorene	86-73-7	1.44E-03	2.08E-08	1.65E-07	2.08E-08
		Formaldehyde	50-00-0	6.34E+00	9.12E-05	7.24E-04	9.12E-05
		Hexane	110-54-3	2.37E+00	3.41E-05	2.71E-04	3.41E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Naphthalene	91-20-3	1.55E-01	2.22E-06	1.76E-05	2.22E-06
		Phenanthrene	85-01-8	8.76E-03	1.26E-07	1.00E-06	1.26E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Propylene	115-07-1	2.73E+02	3.93E-03	3.12E-02	3.93E-03
		Pyrene	129-00-0	2.58E-03	3.71E-08	2.94E-07	3.70E-08
		Sulfuric acid	7664-93-9	4.69E+02	6.75E-03	5.36E-02	6.75E-03
		Toluene	108-88-3	1.37E+01	1.96E-04	1.56E-03	1.96E-04
		Xylenes (mixed)	1330-20-7	1.02E+01	1.46E-04	1.16E-03	1.46E-04
H351	Heater H-351 (vents to SCR	2-Methyl naphthalene	91-57-6	1.24E-02	1.78E-07	1.41E-06	1.78E-07
		3-Methylcholanthrene	56-49-5	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		7,12-Dimethylbenz[a]anthracene	57-97-6	8.24E-03	1.19E-07	9.41E-07	1.19E-07
		Acenaphthene	83-32-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Acenaphthylene	208-96-8	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Acetaldehyde	75-07-0	1.60E+00	2.30E-05	1.82E-04	2.30E-05
		Acrolein	107-02-8	1.39E+00	2.00E-05	1.59E-04	2.00E-05
		Ammonia	7664-41-7	1.18E+03	1.70E-02	1.35E-01	1.70E-02
		Anthracene	120-12-7	1.24E-03	1.78E-08	1.41E-07	1.78E-08
		Benz[a]anthracene	56-55-3	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Benzene	71-43-2	2.99E+00	4.30E-05	3.41E-04	4.30E-05
		Benzo[a]pyrene	50-32-8	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Benzo[b]fluoranthene	205-99-2	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Benzo[g,h,i]perylene	191-24-2	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Benzo[k]fluoranthene	207-08-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Chrysene	218-01-9	9.28E-04	1.33E-08	1.06E-07	1.34E-08
		Dibenz[a,h]anthracene	53-70-3	6.18E-04	8.89E-09	7.06E-08	8.90E-09
		Ethyl benzene	100-41-4	3.56E+00	5.11E-05	4.06E-04	5.11E-05
		Fluoranthene	206-44-0	1.55E-03	2.22E-08	1.76E-07	2.22E-08
		Fluorene	86-73-7	1.44E-03	2.08E-08	1.65E-07	2.08E-08
		Formaldehyde	50-00-0	6.34E+00	9.12E-05	7.24E-04	9.12E-05
		Hexane	110-54-3	2.37E+00	3.41E-05	2.71E-04	3.41E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	9.28E-04	1.33E-08	1.06E-07	1.34E-08

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Naphthalene	91-20-3	1.55E-01	2.22E-06	1.76E-05	2.22E-06
		Phenanthrene	85-01-8	8.76E-03	1.26E-07	1.00E-06	1.26E-07
		Propylene	115-07-1	2.73E+02	3.93E-03	3.12E-02	3.93E-03
		Pyrene	129-00-0	2.58E-03	3.71E-08	2.94E-07	3.70E-08
		Sulfuric acid	7664-93-9	4.69E+02	6.75E-03	5.36E-02	6.75E-03
		Toluene	108-88-3	1.37E+01	1.96E-04	1.56E-03	1.96E-04
		Xylenes (mixed)	1330-20-7	1.02E+01	1.46E-04	1.16E-03	1.46E-04
H401_402	Heaters 401 and 402 (common	2-Methyl naphthalene	91-57-6	3.71E-03	5.34E-08	2.33E-07	2.94E-08
		3-Methylcholanthrene	56-49-5	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	2.47E-03	3.56E-08	1.55E-07	1.95E-08
		Acenaphthene	83-32-9	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Acenaphthylene	208-96-8	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Acetaldehyde	75-07-0	5.62E-01	8.08E-06	3.53E-05	4.45E-06
		Acrolein	107-02-8	4.17E-01	6.00E-06	2.62E-05	3.30E-06
		Ammonia	7664-41-7	4.61E+02	6.63E-03	5.26E-02	6.63E-03
		Anthracene	120-12-7	3.71E-04	5.34E-09	2.33E-08	2.94E-09
		Benz[a]anthracene	56-55-3	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Benzene	71-43-2	1.05E+00	1.51E-05	6.58E-05	8.29E-06
		Benzo[a]pyrene	50-32-8	1.86E-04	2.67E-09	1.16E-08	1.46E-09
		Benzo[b]fluoranthene	205-99-2	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Benzo[g,h,i]perylene	191-24-2	1.86E-04	2.67E-09	1.16E-08	1.46E-09
		Benzo[k]fluoranthene	207-08-9	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Chrysene	218-01-9	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Dibenz[a,h]anthracene	53-70-3	1.86E-04	2.67E-09	1.16E-08	1.46E-09
		Ethyl benzene	100-41-4	1.25E+00	1.79E-05	7.82E-05	9.85E-06
		Fluoranthene	206-44-0	4.64E-04	6.67E-09	2.91E-08	3.67E-09
		Fluorene	86-73-7	4.33E-04	6.23E-09	2.72E-08	3.43E-09
		Formaldehyde	50-00-0	2.22E+00	3.20E-05	1.40E-04	1.76E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	8.28E-01	1.19E-05	5.20E-05	6.55E-06
		Indeno[1,2,3-cd]pyrene	193-39-5	2.78E-04	4.00E-09	1.75E-08	2.21E-09
		Naphthalene	91-20-3	4.64E-02	6.67E-07	2.91E-06	3.67E-07
		Phenanthrene	85-01-8	2.63E-03	3.78E-08	1.65E-07	2.08E-08
		Propylene	115-07-1	9.57E+01	1.38E-03	6.01E-03	7.57E-04
		Pyrene	129-00-0	7.73E-04	1.11E-08	4.85E-08	6.11E-09
		Sulfuric acid	7664-93-9	1.66E+03	2.39E-02	1.90E-01	2.39E-02
		Toluene	108-88-3	4.79E+00	6.89E-05	3.01E-04	3.79E-05
		Xylenes (mixed)	1330-20-7	3.56E+00	5.12E-05	2.24E-04	2.82E-05
H501_502	Heaters 501 and 502 (common	2-Methyl naphthalene	91-57-6	5.77E-03	8.30E-08	6.59E-07	8.30E-08
		3-Methylcholanthrene	56-49-5	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	3.85E-03	5.53E-08	4.39E-07	5.53E-08
		Acenaphthene	83-32-9	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Acenaphthylene	208-96-8	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Acetaldehyde	75-07-0	7.45E-01	1.07E-05	8.51E-05	1.07E-05
		Acrolein	107-02-8	6.49E-01	9.34E-06	7.41E-05	9.34E-06
		Ammonia	7664-41-7	5.51E+02	7.93E-03	6.29E-02	7.93E-03
		Anthracene	120-12-7	5.77E-04	8.30E-09	6.59E-08	8.30E-09
		Benz[a]anthracene	56-55-3	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Benzene	71-43-2	1.39E+00	2.01E-05	1.59E-04	2.01E-05
		Benzo[a]pyrene	50-32-8	2.89E-04	4.15E-09	3.29E-08	4.15E-09
		Benzo[b]fluoranthene	205-99-2	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Benzo[g,h,i]perylene	191-24-2	2.89E-04	4.15E-09	3.29E-08	4.15E-09
		Benzo[k]fluoranthene	207-08-9	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Chrysene	218-01-9	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Dibenz[a,h]anthracene	53-70-3	2.89E-04	4.15E-09	3.29E-08	4.15E-09
		Ethyl benzene	100-41-4	1.66E+00	2.39E-05	1.89E-04	2.39E-05
		Fluoranthene	206-44-0	7.21E-04	1.04E-08	8.24E-08	1.04E-08

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Fluorene	86-73-7	6.73E-04	9.68E-09	7.69E-08	9.69E-09
		Formaldehyde	50-00-0	2.96E+00	4.25E-05	3.38E-04	4.25E-05
		Hexane	110-54-3	1.11E+00	1.59E-05	1.26E-04	1.59E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	4.33E-04	6.23E-09	4.94E-08	6.22E-09
		Naphthalene	91-20-3	7.21E-02	1.04E-06	8.24E-06	1.04E-06
		Phenanthrene	85-01-8	4.09E-03	5.88E-08	4.67E-07	5.88E-08
		Propylene	115-07-1	1.27E+02	1.83E-03	1.45E-02	1.83E-03
		Pyrene	129-00-0	1.20E-03	1.73E-08	1.37E-07	1.73E-08
		Sulfuric acid	7664-93-9	2.19E+02	3.15E-03	2.50E-02	3.15E-03
		Toluene	108-88-3	6.37E+00	9.17E-05	7.27E-04	9.17E-05
		Xylenes (mixed)	1330-20-7	4.74E+00	6.81E-05	5.41E-04	6.81E-05
H907_908	Heater 907 and 908 (common	2-Methyl naphthalene	91-57-6	7.21E-03	1.04E-07	4.53E-07	5.71E-08
		3-Methylcholanthrene	56-49-5	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		7,12-Dimethylbenz[a]anthracene	57-97-6	4.81E-03	6.92E-08	3.02E-07	3.81E-08
		Acenaphthene	83-32-9	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Acenaphthylene	208-96-8	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Acetaldehyde	75-07-0	1.09E+00	1.56E-05	6.82E-05	8.59E-06
		Acrolein	107-02-8	8.12E-01	1.17E-05	5.10E-05	6.43E-06
		Ammonia	7664-41-7	9.62E+02	1.38E-02	6.04E-02	7.61E-03
		Anthracene	120-12-7	7.21E-04	1.04E-08	4.53E-08	5.71E-09
		Benz[a]anthracene	56-55-3	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Benzene	71-43-2	2.03E+00	2.92E-05	1.27E-04	1.60E-05
		Benzo[a]pyrene	50-32-8	3.61E-04	5.19E-09	2.26E-08	2.85E-09
		Benzo[b]fluoranthene	205-99-2	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Benzo[g,h,i]perylene	191-24-2	3.61E-04	5.19E-09	2.26E-08	2.85E-09
		Benzo[k]fluoranthene	207-08-9	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Chrysene	218-01-9	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Dibenz[a,h]anthracene	53-70-3	3.61E-04	5.19E-09	2.26E-08	2.85E-09

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Ethyl benzene	100-41-4	2.41E+00	3.47E-05	1.51E-04	1.91E-05
		Fluoranthene	206-44-0	9.02E-04	1.30E-08	5.66E-08	7.13E-09
		Fluorene	86-73-7	8.42E-04	1.21E-08	5.28E-08	6.65E-09
		Formaldehyde	50-00-0	4.30E+00	6.19E-05	2.70E-04	3.40E-05
		Hexane	110-54-3	1.60E+00	2.30E-05	1.01E-04	1.27E-05
		Indeno[1,2,3-cd]pyrene	193-39-5	5.41E-04	7.78E-09	3.40E-08	4.28E-09
		Naphthalene	91-20-3	9.02E-02	1.30E-06	5.66E-06	7.13E-07
		Phenanthrene	85-01-8	5.11E-03	7.35E-08	3.21E-07	4.04E-08
		Propylene	115-07-1	1.85E+02	2.66E-03	1.16E-02	1.47E-03
		Pyrene	129-00-0	1.50E-03	2.16E-08	9.44E-08	1.19E-08
		Sulfuric acid	7664-93-9	7.40E+03	1.06E-01	8.44E-01	1.06E-01
		Toluene	108-88-3	9.27E+00	1.33E-04	5.82E-04	7.33E-05
		Xylenes (mixed)	1330-20-7	6.89E+00	9.91E-05	4.32E-04	5.45E-05
NEWFLARE	New flare	2-Methyl naphthalene	91-57-6	7.01E-05	1.01E-09	8.00E-09	1.01E-09
		3-Methylcholanthrene	56-49-5	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		7,12-Dimethylbenz[a]anthracene	57-97-6	4.67E-05	6.72E-10	5.33E-09	6.72E-10
		Acenaphthene	83-32-9	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Acenaphthylene	208-96-8	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Acetaldehyde	75-07-0	1.26E-02	1.81E-07	1.43E-06	1.80E-07
		Acrolein	107-02-8	7.89E-03	1.13E-07	9.00E-07	1.13E-07
		Ammonia	7664-41-7	9.35E+00	1.34E-04	1.07E-03	1.34E-04
		Anthracene	120-12-7	7.01E-06	1.01E-10	8.00E-10	1.01E-10
		Benz[a]anthracene	56-55-3	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Benzene	71-43-2	2.34E-02	3.36E-07	2.67E-06	3.36E-07
		Benzo[a]pyrene	50-32-8	3.50E-06	5.03E-11	4.00E-10	5.04E-11
		Benzo[b]fluoranthene	205-99-2	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Benzo[g,h,i]perylene	191-24-2	3.50E-06	5.03E-11	4.00E-10	5.04E-11
		Benzo[k]fluoranthene	207-08-9	5.26E-06	7.57E-11	6.00E-10	7.56E-11

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Chrysene	218-01-9	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Dibenz[a,h]anthracene	53-70-3	3.50E-06	5.03E-11	4.00E-10	5.04E-11
		Ethyl benzene	100-41-4	2.77E-02	3.99E-07	3.17E-06	3.99E-07
		Fluoranthene	206-44-0	8.76E-06	1.26E-10	1.00E-09	1.26E-10
		Fluorene	86-73-7	8.18E-06	1.18E-10	9.34E-10	1.18E-10
		Formaldehyde	50-00-0	4.97E-02	7.14E-07	5.67E-06	7.14E-07
		Hexane	110-54-3	1.84E-02	2.65E-07	2.10E-06	2.65E-07
		Indeno[1,2,3-cd]pyrene	193-39-5	5.26E-06	7.57E-11	6.00E-10	7.56E-11
		Naphthalene	91-20-3	8.76E-04	1.26E-08	1.00E-07	1.26E-08
		Phenanthrene	85-01-8	4.97E-05	7.15E-10	5.67E-09	7.14E-10
		Propylene	115-07-1	2.14E+00	3.07E-05	2.44E-04	3.07E-05
		Pyrene	129-00-0	1.46E-05	2.10E-10	1.67E-09	2.10E-10
		Sulfuric acid	7664-93-9	3.27E-01	4.71E-06	3.74E-05	4.71E-06
		Toluene	108-88-3	1.07E-01	1.54E-06	1.22E-05	1.54E-06
		Xylenes (mixed)	1330-20-7	7.94E-02	1.14E-06	9.07E-06	1.14E-06
PRE_FLTR	Pretreat unit filter media transfers	Silica, crystalline (respirable)	1175	1.81E+01	2.60E-04	2.06E-03	2.60E-04
		Sulfuric acid	7664-93-9	6.87E+00	9.88E-05	7.84E-04	9.88E-05
PVENT401	Unit A amine acid gas, sour water	1,2,4-Trimethylbenzene	95-63-6	1.79E-02	2.58E-07	2.05E-06	2.58E-07
		Benzene	71-43-2	1.22E+01	1.76E-04	1.40E-03	1.76E-04
		Cyclohexane	110-82-7	3.67E+01	5.28E-04	4.19E-03	5.28E-04
		Ethyl benzene	100-41-4	4.34E+00	6.25E-05	4.96E-04	6.25E-05
		Ethylene	74-85-1	1.82E+02	2.62E-03	2.08E-02	2.62E-03
		Hexane	110-54-3	4.51E+02	6.49E-03	5.15E-02	6.49E-03
		Naphthalene	91-20-3	8.15E-03	1.17E-07	9.30E-07	1.17E-07
		Toluene	108-88-3	9.11E+01	1.31E-03	1.04E-02	1.31E-03
		Xylenes (mixed)	1330-20-7	2.45E+01	3.53E-04	2.80E-03	3.53E-04
PVENT907	Unit B amine acid gas, sour water	Benzene	71-43-2	5.95E+00	8.56E-05	6.79E-04	8.56E-05
		Cyclohexane	110-82-7	8.16E+00	1.17E-04	9.32E-04	1.17E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	5.20E+03	7.48E-02	5.93E-01	7.48E-02
		Toluene	108-88-3	5.11E+00	7.34E-05	5.83E-04	7.34E-05
R18_ST	Load Rack 18 stack emissions (vents	1,2,4-Trimethylbenzene	95-63-6	2.12E-01	3.05E-06	3.51E-05	4.42E-06
		2,2,4-Trimethylpentane	540-84-1	5.58E+00	8.03E-05	8.41E-04	1.06E-04
		Benzene	71-43-2	1.06E+00	1.52E-05	1.58E-04	1.99E-05
		Cumene	98-82-8	1.45E-02	2.08E-07	2.34E-06	2.95E-07
		Cyclohexane	110-82-7	1.26E+00	1.81E-05	1.86E-04	2.35E-05
		Ethyl benzene	100-41-4	1.72E-01	2.48E-06	2.73E-05	3.44E-06
		Hexane	110-54-3	8.36E+00	1.20E-04	1.23E-03	1.55E-04
		Hydrogen sulfide	7783-06-4	1.37E-01	1.98E-06	1.83E-05	2.31E-06
		Isoprene, except from vegetative	78-79-5	8.58E-02	1.23E-06	1.22E-05	1.54E-06
		Methanol	67-56-1	3.96E-02	5.70E-07	6.09E-06	7.67E-07
		Naphthalene	91-20-3	2.08E-03	2.99E-08	3.59E-07	4.52E-08
		Toluene	108-88-3	1.10E+00	1.58E-05	1.68E-04	2.12E-05
		Xylenes (mixed)	1330-20-7	1.24E+00	1.78E-05	1.97E-04	2.48E-05
R19_ST	Load Rack 19 stack emissions (vents	1,2,4-Trimethylbenzene	95-63-6	7.60E-01	1.09E-05	1.76E-04	2.22E-05
		2,2,4-Trimethylpentane	540-84-1	4.26E+01	6.13E-04	9.00E-03	1.13E-03
		Benzene	71-43-2	7.77E+00	1.12E-04	1.62E-03	2.05E-04
		Cumene	98-82-8	1.02E-02	1.46E-07	2.31E-06	2.91E-07
		Cyclohexane	110-82-7	3.03E+00	4.35E-05	6.30E-04	7.93E-05
		Ethyl benzene	100-41-4	5.10E-01	7.34E-06	1.13E-04	1.43E-05
		Hexane	110-54-3	6.43E+01	9.25E-04	1.33E-02	1.67E-03
		Methanol	67-56-1	3.12E-01	4.49E-06	6.72E-05	8.47E-06
		Naphthalene	91-20-3	5.95E-03	8.56E-08	1.44E-06	1.81E-07
		Toluene	108-88-3	7.45E+00	1.07E-04	1.60E-03	2.02E-04
		Xylenes (mixed)	1330-20-7	7.62E+00	1.10E-04	1.70E-03	2.14E-04
R20_ST	Load Rack 20 stack emissions (vents	1,2,4-Trimethylbenzene	95-63-6	8.44E-01	1.21E-05	1.89E-04	2.38E-05
		2,2,4-Trimethylpentane	540-84-1	4.73E+01	6.81E-04	9.64E-03	1.21E-03

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	8.63E+00	1.24E-04	1.74E-03	2.19E-04
		Cumene	98-82-8	1.13E-02	1.63E-07	2.48E-06	3.12E-07
		Cyclohexane	110-82-7	3.36E+00	4.84E-05	6.75E-04	8.50E-05
		Ethyl benzene	100-41-4	5.67E-01	8.16E-06	1.21E-04	1.53E-05
		Hexane	110-54-3	7.14E+01	1.03E-03	1.42E-02	1.79E-03
		Methanol	67-56-1	3.47E-01	4.98E-06	7.20E-05	9.07E-06
		Naphthalene	91-20-3	6.61E-03	9.51E-08	1.54E-06	1.94E-07
		Toluene	108-88-3	8.28E+00	1.19E-04	1.72E-03	2.17E-04
		Xylenes (mixed)	1330-20-7	8.46E+00	1.22E-04	1.82E-03	2.29E-04
R21_ST	Load Rack 21 stack emissions (vents	1,2,4-Trimethylbenzene	95-63-6	8.44E-01	1.21E-05	1.89E-04	2.38E-05
		2,2,4-Trimethylpentane	540-84-1	4.73E+01	6.81E-04	9.64E-03	1.21E-03
		Benzene	71-43-2	8.63E+00	1.24E-04	1.74E-03	2.19E-04
		Cumene	98-82-8	1.13E-02	1.63E-07	2.48E-06	3.12E-07
		Cyclohexane	110-82-7	3.36E+00	4.84E-05	6.75E-04	8.50E-05
		Ethyl benzene	100-41-4	5.67E-01	8.16E-06	1.21E-04	1.53E-05
		Hexane	110-54-3	7.14E+01	1.03E-03	1.42E-02	1.79E-03
		Methanol	67-56-1	3.47E-01	4.98E-06	7.20E-05	9.07E-06
		Naphthalene	91-20-3	6.61E-03	9.51E-08	1.54E-06	1.94E-07
		Toluene	108-88-3	8.28E+00	1.19E-04	1.72E-03	2.17E-04
		Xylenes (mixed)	1330-20-7	8.46E+00	1.22E-04	1.82E-03	2.29E-04
R6061_ST	Load Rack 60 & 61 stack emissions	1,2,4-Trimethylbenzene	95-63-6	8.01E-01	1.15E-05	2.86E-04	3.61E-05
		Benzene	71-43-2	3.31E-01	4.77E-06	1.07E-04	1.35E-05
		Cumene	98-82-8	8.65E-02	1.24E-06	3.03E-05	3.82E-06
		Cyclohexane	110-82-7	7.49E+00	1.08E-04	2.40E-03	3.03E-04
		Ethyl benzene	100-41-4	6.79E-01	9.77E-06	2.33E-04	2.93E-05
		Hexane	110-54-3	1.87E-01	2.69E-06	5.96E-05	7.51E-06
		Hydrogen sulfide	7783-06-4	4.22E-01	6.06E-06	1.21E-04	1.53E-05
		Isoprene, except from vegetative	78-79-5	1.01E+00	1.45E-05	3.10E-04	3.91E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Naphthalene	91-20-3	3.67E-03	5.28E-08	1.37E-06	1.73E-07
		Toluene	108-88-3	5.25E-01	7.55E-06	1.74E-04	2.19E-05
		Xylenes (mixed)	1330-20-7	1.77E+00	2.55E-05	6.09E-04	7.68E-05
R7071_ST	Load Rack 70 & 71 stack emissions	1,2,4-Trimethylbenzene	95-63-6	8.01E-01	1.15E-05	2.86E-04	3.61E-05
		Benzene	71-43-2	3.31E-01	4.77E-06	1.07E-04	1.35E-05
		Cumene	98-82-8	8.65E-02	1.24E-06	3.03E-05	3.82E-06
		Cyclohexane	110-82-7	7.49E+00	1.08E-04	2.40E-03	3.03E-04
		Ethyl benzene	100-41-4	6.79E-01	9.77E-06	2.33E-04	2.93E-05
		Hexane	110-54-3	1.87E-01	2.69E-06	5.96E-05	7.51E-06
		Hydrogen sulfide	7783-06-4	4.22E-01	6.06E-06	1.21E-04	1.53E-05
		Isoprene, except from vegetative	78-79-5	1.01E+00	1.45E-05	3.10E-04	3.91E-05
		Naphthalene	91-20-3	3.67E-03	5.28E-08	1.37E-06	1.73E-07
		Toluene	108-88-3	5.25E-01	7.55E-06	1.74E-04	2.19E-05
		Xylenes (mixed)	1330-20-7	1.77E+00	2.55E-05	6.09E-04	7.68E-05
R8081_ST	Load Rack 80 & 81 stack emissions	1,2,4-Trimethylbenzene	95-63-6	7.60E-01	1.09E-05	1.76E-04	2.22E-05
		2,2,4-Trimethylpentane	540-84-1	4.26E+01	6.13E-04	9.00E-03	1.13E-03
		Benzene	71-43-2	7.77E+00	1.12E-04	1.62E-03	2.05E-04
		Cumene	98-82-8	1.02E-02	1.46E-07	2.31E-06	2.91E-07
		Cyclohexane	110-82-7	3.03E+00	4.35E-05	6.30E-04	7.93E-05
		Ethyl benzene	100-41-4	5.10E-01	7.34E-06	1.13E-04	1.43E-05
		Hexane	110-54-3	6.43E+01	9.25E-04	1.33E-02	1.67E-03
		Methanol	67-56-1	3.12E-01	4.49E-06	6.72E-05	8.47E-06
		Naphthalene	91-20-3	5.95E-03	8.56E-08	1.44E-06	1.81E-07
		Toluene	108-88-3	7.45E+00	1.07E-04	1.60E-03	2.02E-04
		Xylenes (mixed)	1330-20-7	7.62E+00	1.10E-04	1.70E-03	2.14E-04
SP_CAUST	Spent Caustic Loading Rack (vents	Benzene	71-43-2	1.58E-04	2.27E-09	1.92E-08	2.42E-09
		Hexane	110-54-3	1.21E-05	1.74E-10	1.49E-09	1.88E-10
		Toluene	108-88-3	3.87E-04	5.57E-09	4.56E-08	5.75E-09

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes (mixed)	1330-20-7	1.52E-04	2.19E-09	1.79E-08	2.26E-09
SP3_ST	Railroad Spur 3 load rack stack	1,2,4-Trimethylbenzene	95-63-6	2.36E-01	3.39E-06	3.77E-05	4.75E-06
		2,2,4-Trimethylpentane	540-84-1	1.32E+01	1.90E-04	1.93E-03	2.43E-04
		Benzene	71-43-2	2.41E+00	3.46E-05	3.48E-04	4.39E-05
		Cumene	98-82-8	3.16E-03	4.54E-08	4.95E-07	6.24E-08
		Cyclohexane	110-82-7	9.38E-01	1.35E-05	1.35E-04	1.70E-05
		Ethyl benzene	100-41-4	1.58E-01	2.28E-06	2.43E-05	3.06E-06
		Hexane	110-54-3	1.99E+01	2.87E-04	2.84E-03	3.58E-04
		Methanol	67-56-1	9.67E-02	1.39E-06	1.44E-05	1.81E-06
		Naphthalene	91-20-3	1.84E-03	2.65E-08	3.08E-07	3.88E-08
		Toluene	108-88-3	2.31E+00	3.32E-05	3.44E-04	4.33E-05
		Xylenes (mixed)	1330-20-7	2.36E+00	3.40E-05	3.63E-04	4.58E-05
T1000	Tank 1000 - Vents to H-401	Benzene	71-43-2	7.45E-05	1.07E-09	8.50E-09	1.07E-09
		Hexane	110-54-3	5.68E-06	8.17E-11	6.49E-10	8.18E-11
		Toluene	108-88-3	1.83E-04	2.64E-09	2.09E-08	2.63E-09
		Xylenes (mixed)	1330-20-7	7.25E-05	1.04E-09	8.28E-09	1.04E-09
T10001	Tank 10001	1,2,4-Trimethylbenzene	95-63-6	4.70E-01	6.76E-06	5.36E-05	6.75E-06
		2,2,4-Trimethylpentane	540-84-1	7.24E-01	1.04E-05	8.27E-05	1.04E-05
		Benzene	71-43-2	3.10E-04	4.46E-09	3.54E-08	4.46E-09
		Cumene	98-82-8	1.44E-02	2.07E-07	1.64E-06	2.07E-07
		Cyclohexane	110-82-7	1.12E-01	1.61E-06	1.28E-05	1.61E-06
		Ethyl benzene	100-41-4	8.50E-02	1.22E-06	9.70E-06	1.22E-06
		Hexane	110-54-3	6.22E-01	8.95E-06	7.10E-05	8.95E-06
		Hydrogen sulfide	7783-06-4	6.71E-03	9.65E-08	7.66E-07	9.65E-08
		Isoprene, except from vegetative	78-79-5	4.75E-03	6.84E-08	5.43E-07	6.84E-08
		Methanol	67-56-1	3.20E-03	4.60E-08	3.65E-07	4.60E-08
		Naphthalene	91-20-3	3.70E-02	5.33E-07	4.23E-06	5.33E-07
		Toluene	108-88-3	2.11E-01	3.03E-06	2.41E-05	3.04E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes (mixed)	1330-20-7	6.92E-01	9.95E-06	7.90E-05	9.95E-06
T10005	Tank 10005	1,2,4-Trimethylbenzene	95-63-6	5.66E+00	8.14E-05	6.46E-04	8.14E-05
		2,2,4-Trimethylpentane	540-84-1	3.12E+01	4.49E-04	3.56E-03	4.49E-04
		Benzene	71-43-2	4.69E+00	6.75E-05	5.36E-04	6.75E-05
		Cumene	98-82-8	3.58E-02	5.14E-07	4.08E-06	5.14E-07
		Cyclohexane	110-82-7	1.82E+00	2.61E-05	2.07E-04	2.61E-05
		Ethyl benzene	100-41-4	9.72E-01	1.40E-05	1.11E-04	1.40E-05
		Hexane	110-54-3	3.56E+01	5.12E-04	4.06E-03	5.12E-04
		Methanol	67-56-1	1.79E-01	2.57E-06	2.04E-05	2.57E-06
		Naphthalene	91-20-3	3.43E-01	4.93E-06	3.91E-05	4.93E-06
		Toluene	108-88-3	6.96E+00	1.00E-04	7.94E-04	1.00E-04
		Xylenes (mixed)	1330-20-7	1.61E+01	2.31E-04	1.84E-03	2.31E-04
T10006	Tank 10006	1,2,4-Trimethylbenzene	95-63-6	2.85E+01	4.10E-04	3.26E-03	4.10E-04
		Benzene	71-43-2	1.18E+01	1.69E-04	1.34E-03	1.69E-04
		Cumene	98-82-8	3.08E+00	4.43E-05	3.52E-04	4.43E-05
		Cyclohexane	110-82-7	2.66E+02	3.83E-03	3.04E-02	3.83E-03
		Ethyl benzene	100-41-4	2.42E+01	3.48E-04	2.76E-03	3.48E-04
		Hexane	110-54-3	6.66E+00	9.57E-05	7.60E-04	9.57E-05
		Hydrogen sulfide	7783-06-4	1.50E+01	2.15E-04	1.71E-03	2.15E-04
		Isoprene, except from vegetative	78-79-5	3.59E+01	5.16E-04	4.10E-03	5.16E-04
		Naphthalene	91-20-3	1.31E-01	1.88E-06	1.49E-05	1.88E-06
		Toluene	108-88-3	1.87E+01	2.68E-04	2.13E-03	2.68E-04
		Xylenes (mixed)	1330-20-7	6.31E+01	9.08E-04	7.20E-03	9.08E-04
T10007	Tank 10007	1,2,4-Trimethylbenzene	95-63-6	2.85E+01	4.10E-04	3.26E-03	4.10E-04
		Benzene	71-43-2	1.18E+01	1.69E-04	1.34E-03	1.69E-04
		Cumene	98-82-8	3.08E+00	4.43E-05	3.52E-04	4.43E-05
		Cyclohexane	110-82-7	2.66E+02	3.83E-03	3.04E-02	3.83E-03
		Ethyl benzene	100-41-4	2.42E+01	3.48E-04	2.76E-03	3.48E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	6.66E+00	9.57E-05	7.60E-04	9.57E-05
		Hydrogen sulfide	7783-06-4	1.50E+01	2.15E-04	1.71E-03	2.15E-04
		Isoprene, except from vegetative	78-79-5	3.59E+01	5.16E-04	4.10E-03	5.16E-04
		Naphthalene	91-20-3	1.31E-01	1.88E-06	1.49E-05	1.88E-06
		Toluene	108-88-3	1.87E+01	2.68E-04	2.13E-03	2.68E-04
		Xylenes (mixed)	1330-20-7	6.31E+01	9.08E-04	7.20E-03	9.08E-04
T10008	Tank 10008	1,2,4-Trimethylbenzene	95-63-6	2.95E+01	4.24E-04	3.36E-03	4.24E-04
		Benzene	71-43-2	1.22E+01	1.76E-04	1.39E-03	1.76E-04
		Cumene	98-82-8	3.18E+00	4.58E-05	3.63E-04	4.58E-05
		Cyclohexane	110-82-7	2.76E+02	3.97E-03	3.15E-02	3.97E-03
		Ethyl benzene	100-41-4	2.50E+01	3.60E-04	2.85E-03	3.60E-04
		Hexane	110-54-3	6.91E+00	9.93E-05	7.88E-04	9.93E-05
		Hydrogen sulfide	7783-06-4	1.56E+01	2.24E-04	1.78E-03	2.24E-04
		Isoprene, except from vegetative	78-79-5	3.73E+01	5.36E-04	4.26E-03	5.36E-04
		Naphthalene	91-20-3	1.35E-01	1.94E-06	1.54E-05	1.94E-06
		Toluene	108-88-3	1.93E+01	2.78E-04	2.21E-03	2.78E-04
		Xylenes (mixed)	1330-20-7	6.53E+01	9.39E-04	7.45E-03	9.39E-04
T10009	Tank 10009	1,2,4-Trimethylbenzene	95-63-6	4.70E-01	6.76E-06	5.36E-05	6.75E-06
		2,2,4-Trimethylpentane	540-84-1	7.24E-01	1.04E-05	8.27E-05	1.04E-05
		Benzene	71-43-2	3.10E-04	4.46E-09	3.54E-08	4.46E-09
		Cumene	98-82-8	1.44E-02	2.07E-07	1.64E-06	2.07E-07
		Cyclohexane	110-82-7	1.12E-01	1.61E-06	1.28E-05	1.61E-06
		Ethyl benzene	100-41-4	8.50E-02	1.22E-06	9.70E-06	1.22E-06
		Hexane	110-54-3	6.22E-01	8.95E-06	7.10E-05	8.95E-06
		Hydrogen sulfide	7783-06-4	6.71E-03	9.65E-08	7.66E-07	9.65E-08
		Isoprene, except from vegetative	78-79-5	4.75E-03	6.84E-08	5.43E-07	6.84E-08
		Methanol	67-56-1	3.20E-03	4.60E-08	3.65E-07	4.60E-08
		Naphthalene	91-20-3	3.70E-02	5.33E-07	4.23E-06	5.33E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	2.11E-01	3.03E-06	2.41E-05	3.04E-06
		Xylenes (mixed)	1330-20-7	6.92E-01	9.95E-06	7.90E-05	9.95E-06
T12501	Tank 12501	1,2,4-Trimethylbenzene	95-63-6	3.89E+00	5.59E-05	4.44E-04	5.59E-05
		2,2,4-Trimethylpentane	540-84-1	4.25E+00	6.12E-05	4.85E-04	6.12E-05
		Benzene	71-43-2	4.55E-01	6.54E-06	5.19E-05	6.54E-06
		Cumene	98-82-8	1.16E-01	1.67E-06	1.33E-05	1.68E-06
		Cyclohexane	110-82-7	5.26E-01	7.56E-06	6.00E-05	7.56E-06
		Ethyl benzene	100-41-4	6.59E-01	9.48E-06	7.52E-05	9.48E-06
		Hexane	110-54-3	2.47E+00	3.56E-05	2.82E-04	3.56E-05
		Hydrogen sulfide	7783-06-4	1.09E-02	1.57E-07	1.25E-06	1.58E-07
		Isoprene, except from vegetative	78-79-5	1.16E-02	1.67E-07	1.33E-06	1.68E-07
		Methanol	67-56-1	1.38E-02	1.99E-07	1.58E-06	1.99E-07
		Naphthalene	91-20-3	3.11E-01	4.48E-06	3.55E-05	4.47E-06
		Toluene	108-88-3	1.41E+00	2.03E-05	1.61E-04	2.03E-05
		Xylenes (mixed)	1330-20-7	5.42E+00	7.80E-05	6.19E-04	7.80E-05
T12502	Tank 12502	1,2,4-Trimethylbenzene	95-63-6	3.89E+00	5.59E-05	4.44E-04	5.59E-05
		2,2,4-Trimethylpentane	540-84-1	4.25E+00	6.12E-05	4.85E-04	6.12E-05
		Benzene	71-43-2	4.55E-01	6.54E-06	5.19E-05	6.54E-06
		Cumene	98-82-8	1.16E-01	1.67E-06	1.33E-05	1.68E-06
		Cyclohexane	110-82-7	5.26E-01	7.56E-06	6.00E-05	7.56E-06
		Ethyl benzene	100-41-4	6.59E-01	9.48E-06	7.52E-05	9.48E-06
		Hexane	110-54-3	2.47E+00	3.56E-05	2.82E-04	3.56E-05
		Hydrogen sulfide	7783-06-4	1.09E-02	1.57E-07	1.25E-06	1.58E-07
		Isoprene, except from vegetative	78-79-5	1.16E-02	1.67E-07	1.33E-06	1.68E-07
		Methanol	67-56-1	1.38E-02	1.99E-07	1.58E-06	1.99E-07
		Naphthalene	91-20-3	3.11E-01	4.48E-06	3.55E-05	4.47E-06
		Toluene	108-88-3	1.41E+00	2.03E-05	1.61E-04	2.03E-05
		Xylenes (mixed)	1330-20-7	5.42E+00	7.80E-05	6.19E-04	7.80E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
T150001	Tank 150001 - Vents to carbon	1,2,4-Trimethylbenzene	95-63-6	1.96E+01	2.82E-04	2.24E-03	2.82E-04
		Benzene	71-43-2	8.10E+00	1.17E-04	9.25E-04	1.17E-04
		Cumene	98-82-8	2.12E+00	3.05E-05	2.42E-04	3.05E-05
		Cyclohexane	110-82-7	1.83E+02	2.63E-03	2.09E-02	2.63E-03
		Ethyl benzene	100-41-4	1.66E+01	2.39E-04	1.90E-03	2.39E-04
		Hexane	110-54-3	4.58E+00	6.58E-05	5.22E-04	6.58E-05
		Hydrogen sulfide	7783-06-4	1.03E+01	1.48E-04	1.17E-03	1.48E-04
		Isoprene, except from vegetative	78-79-5	2.47E+01	3.55E-04	2.82E-03	3.55E-04
		Naphthalene	91-20-3	9.01E-02	1.30E-06	1.03E-05	1.30E-06
		Toluene	108-88-3	1.28E+01	1.85E-04	1.46E-03	1.85E-04
		Xylenes (mixed)	1330-20-7	4.34E+01	6.24E-04	4.96E-03	6.24E-04
T20001	Tank 20001	Hexane	110-54-3	4.33E-02	6.23E-07	4.94E-06	6.22E-07
T20002	Tank 20002	Hexane	110-54-3	4.33E-02	6.23E-07	4.94E-06	6.22E-07
T20003	Tank 20003	1,2,4-Trimethylbenzene	95-63-6	5.20E+00	7.49E-05	5.94E-04	7.49E-05
		Benzene	71-43-2	1.42E-01	2.04E-06	1.62E-05	2.04E-06
		Cumene	98-82-8	2.61E-01	3.75E-06	2.97E-05	3.74E-06
		Cyclohexane	110-82-7	3.18E+00	4.57E-05	3.63E-04	4.57E-05
		Ethyl benzene	100-41-4	1.08E+00	1.55E-05	1.23E-04	1.55E-05
		Hexane	110-54-3	7.15E-02	1.03E-06	8.17E-06	1.03E-06
		Hydrogen sulfide	7783-06-4	1.27E-01	1.83E-06	1.45E-05	1.83E-06
		Isoprene, except from vegetative	78-79-5	3.29E-01	4.73E-06	3.75E-05	4.73E-06
		Naphthalene	91-20-3	1.87E-01	2.69E-06	2.14E-05	2.70E-06
		Toluene	108-88-3	3.79E-01	5.44E-06	4.32E-05	5.44E-06
		Xylenes (mixed)	1330-20-7	3.14E+00	4.51E-05	3.58E-04	4.51E-05
T20004	Tank 20004	1,2,4-Trimethylbenzene	95-63-6	5.20E+00	7.49E-05	5.94E-04	7.49E-05
		Benzene	71-43-2	1.42E-01	2.04E-06	1.62E-05	2.04E-06
		Cumene	98-82-8	2.61E-01	3.75E-06	2.97E-05	3.74E-06
		Cyclohexane	110-82-7	3.18E+00	4.57E-05	3.63E-04	4.57E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Ethyl benzene	100-41-4	1.08E+00	1.55E-05	1.23E-04	1.55E-05
		Hexane	110-54-3	7.15E-02	1.03E-06	8.17E-06	1.03E-06
		Hydrogen sulfide	7783-06-4	1.27E-01	1.83E-06	1.45E-05	1.83E-06
		Isoprene, except from vegetative	78-79-5	3.29E-01	4.73E-06	3.75E-05	4.73E-06
		Naphthalene	91-20-3	1.87E-01	2.69E-06	2.14E-05	2.70E-06
		Toluene	108-88-3	3.79E-01	5.44E-06	4.32E-05	5.44E-06
		Xylenes (mixed)	1330-20-7	3.14E+00	4.51E-05	3.58E-04	4.51E-05
T20005	Tank 20005	1,2,4-Trimethylbenzene	95-63-6	5.19E+00	7.47E-05	5.93E-04	7.47E-05
		Benzene	71-43-2	1.05E-01	1.51E-06	1.20E-05	1.51E-06
		Cumene	98-82-8	2.54E-01	3.66E-06	2.90E-05	3.65E-06
		Cyclohexane	110-82-7	2.35E+00	3.39E-05	2.69E-04	3.39E-05
		Ethyl benzene	100-41-4	1.01E+00	1.45E-05	1.15E-04	1.45E-05
		Hexane	110-54-3	5.09E-02	7.32E-07	5.81E-06	7.32E-07
		Hydrogen sulfide	7783-06-4	8.32E-02	1.20E-06	9.49E-06	1.20E-06
		Isoprene, except from vegetative	78-79-5	2.19E-01	3.15E-06	2.50E-05	3.15E-06
		Naphthalene	91-20-3	1.90E-01	2.73E-06	2.17E-05	2.73E-06
		Toluene	108-88-3	3.22E-01	4.63E-06	3.68E-05	4.64E-06
		Xylenes (mixed)	1330-20-7	2.97E+00	4.28E-05	3.39E-04	4.28E-05
T2014	Tank 2014	1,2,4-Trimethylbenzene	95-63-6	5.61E+00	8.07E-05	6.40E-04	8.07E-05
		2,2,4-Trimethylpentane	540-84-1	2.70E+01	3.88E-04	3.08E-03	3.88E-04
		Benzene	71-43-2	3.92E+00	5.63E-05	4.47E-04	5.63E-05
		Cumene	98-82-8	3.49E-02	5.02E-07	3.99E-06	5.03E-07
		Cyclohexane	110-82-7	1.51E+00	2.18E-05	1.73E-04	2.18E-05
		Ethyl benzene	100-41-4	9.25E-01	1.33E-05	1.06E-04	1.33E-05
		Hexane	110-54-3	2.91E+01	4.19E-04	3.32E-03	4.19E-04
		Methanol	67-56-1	1.48E-01	2.12E-06	1.69E-05	2.13E-06
		Naphthalene	91-20-3	3.44E-01	4.95E-06	3.93E-05	4.95E-06
		Toluene	108-88-3	6.23E+00	8.95E-05	7.11E-04	8.95E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes (mixed)	1330-20-7	1.54E+01	2.21E-04	1.76E-03	2.21E-04
T242	Tank 242	Benzene	71-43-2	5.09E-03	7.32E-08	5.81E-07	7.32E-08
		Hexane	110-54-3	3.88E-04	5.59E-09	4.43E-08	5.58E-09
		Toluene	108-88-3	1.25E-02	1.80E-07	1.43E-06	1.80E-07
		Xylenes (mixed)	1330-20-7	4.94E-03	7.11E-08	5.64E-07	7.11E-08
T25001	Tank 25001	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04
		2,2,4-Trimethylpentane	540-84-1	4.61E+01	6.63E-04	5.26E-03	6.63E-04
		Benzene	71-43-2	6.17E+00	8.88E-05	7.05E-04	8.88E-05
		Cumene	98-82-8	7.47E-02	1.07E-06	8.52E-06	1.07E-06
		Cyclohexane	110-82-7	2.38E+00	3.42E-05	2.72E-04	3.42E-05
		Ethyl benzene	100-41-4	1.90E+00	2.73E-05	2.17E-04	2.73E-05
		Hexane	110-54-3	4.37E+01	6.29E-04	4.99E-03	6.29E-04
		Methanol	67-56-1	2.26E-01	3.25E-06	2.58E-05	3.25E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.64E-04	1.31E-03	1.64E-04
		Xylenes (mixed)	1330-20-7	3.19E+01	4.59E-04	3.64E-03	4.59E-04
T25002	Tank 25002	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04
		2,2,4-Trimethylpentane	540-84-1	4.61E+01	6.63E-04	5.26E-03	6.63E-04
		Benzene	71-43-2	6.17E+00	8.88E-05	7.05E-04	8.88E-05
		Cumene	98-82-8	7.47E-02	1.07E-06	8.52E-06	1.07E-06
		Cyclohexane	110-82-7	2.38E+00	3.42E-05	2.72E-04	3.42E-05
		Ethyl benzene	100-41-4	1.90E+00	2.73E-05	2.17E-04	2.73E-05
		Hexane	110-54-3	4.37E+01	6.29E-04	4.99E-03	6.29E-04
		Methanol	67-56-1	2.26E-01	3.25E-06	2.58E-05	3.25E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.64E-04	1.31E-03	1.64E-04
		Xylenes (mixed)	1330-20-7	3.19E+01	4.59E-04	3.64E-03	4.59E-04
T25003	Tank 25003	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		2,2,4-Trimethylpentane	540-84-1	4.61E+01	6.63E-04	5.26E-03	6.63E-04
		Benzene	71-43-2	6.17E+00	8.88E-05	7.05E-04	8.88E-05
		Cumene	98-82-8	7.47E-02	1.07E-06	8.52E-06	1.07E-06
		Cyclohexane	110-82-7	2.38E+00	3.42E-05	2.72E-04	3.42E-05
		Ethyl benzene	100-41-4	1.90E+00	2.73E-05	2.17E-04	2.73E-05
		Hexane	110-54-3	4.37E+01	6.29E-04	4.99E-03	6.29E-04
		Methanol	67-56-1	2.26E-01	3.25E-06	2.58E-05	3.25E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.64E-04	1.31E-03	1.64E-04
		Xylenes (mixed)	1330-20-7	3.19E+01	4.59E-04	3.64E-03	4.59E-04
T25004	Tank 25004	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04
		2,2,4-Trimethylpentane	540-84-1	4.61E+01	6.63E-04	5.26E-03	6.63E-04
		Benzene	71-43-2	6.17E+00	8.88E-05	7.05E-04	8.88E-05
		Cumene	98-82-8	7.47E-02	1.07E-06	8.52E-06	1.07E-06
		Cyclohexane	110-82-7	2.38E+00	3.42E-05	2.72E-04	3.42E-05
		Ethyl benzene	100-41-4	1.90E+00	2.73E-05	2.17E-04	2.73E-05
		Hexane	110-54-3	4.37E+01	6.29E-04	4.99E-03	6.29E-04
		Methanol	67-56-1	2.26E-01	3.25E-06	2.58E-05	3.25E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.64E-04	1.31E-03	1.64E-04
		Xylenes (mixed)	1330-20-7	3.19E+01	4.59E-04	3.64E-03	4.59E-04
T25005	Tank 25005	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04
		2,2,4-Trimethylpentane	540-84-1	4.61E+01	6.64E-04	5.27E-03	6.64E-04
		Benzene	71-43-2	6.18E+00	8.89E-05	7.06E-04	8.89E-05
		Cumene	98-82-8	7.47E-02	1.07E-06	8.52E-06	1.07E-06
		Cyclohexane	110-82-7	2.38E+00	3.43E-05	2.72E-04	3.43E-05
		Ethyl benzene	100-41-4	1.90E+00	2.73E-05	2.17E-04	2.73E-05
		Hexane	110-54-3	4.38E+01	6.30E-04	5.00E-03	6.30E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Methanol	67-56-1	2.27E-01	3.26E-06	2.59E-05	3.26E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.65E-04	1.31E-03	1.65E-04
		Xylenes (mixed)	1330-20-7	3.19E+01	4.59E-04	3.64E-03	4.59E-04
T25006	Tank 25006	1,2,4-Trimethylbenzene	95-63-6	1.24E+01	1.79E-04	1.42E-03	1.79E-04
		2,2,4-Trimethylpentane	540-84-1	5.32E+01	7.65E-04	6.07E-03	7.65E-04
		Benzene	71-43-2	7.46E+00	1.07E-04	8.52E-04	1.07E-04
		Cumene	98-82-8	7.64E-02	1.10E-06	8.72E-06	1.10E-06
		Cyclohexane	110-82-7	2.88E+00	4.14E-05	3.29E-04	4.14E-05
		Ethyl benzene	100-41-4	1.98E+00	2.85E-05	2.26E-04	2.85E-05
		Hexane	110-54-3	5.44E+01	7.82E-04	6.21E-03	7.82E-04
		Methanol	67-56-1	2.78E-01	4.00E-06	3.17E-05	3.99E-06
		Naphthalene	91-20-3	7.69E-01	1.11E-05	8.78E-05	1.11E-05
		Toluene	108-88-3	1.27E+01	1.82E-04	1.45E-03	1.82E-04
		Xylenes (mixed)	1330-20-7	3.32E+01	4.77E-04	3.78E-03	4.77E-04
T25007	Tank 25007	1,2,4-Trimethylbenzene	95-63-6	7.49E+01	1.08E-03	8.54E-03	1.08E-03
		Benzene	71-43-2	3.10E+01	4.46E-04	3.54E-03	4.46E-04
		Cumene	98-82-8	8.09E+00	1.16E-04	9.23E-04	1.16E-04
		Cyclohexane	110-82-7	7.00E+02	1.01E-02	7.99E-02	1.01E-02
		Ethyl benzene	100-41-4	6.35E+01	9.13E-04	7.25E-03	9.13E-04
		Hexane	110-54-3	1.75E+01	2.52E-04	2.00E-03	2.52E-04
		Hydrogen sulfide	7783-06-4	3.94E+01	5.67E-04	4.50E-03	5.67E-04
		Isoprene, except from vegetative	78-79-5	9.45E+01	1.36E-03	1.08E-02	1.36E-03
		Naphthalene	91-20-3	3.43E-01	4.94E-06	3.92E-05	4.94E-06
		Toluene	108-88-3	4.90E+01	7.05E-04	5.60E-03	7.05E-04
		Xylenes (mixed)	1330-20-7	1.66E+02	2.38E-03	1.89E-02	2.38E-03
T25008	Tank 25008	1,2,4-Trimethylbenzene	95-63-6	3.31E-01	4.75E-06	3.77E-05	4.75E-06
		2,2,4-Trimethylpentane	540-84-1	6.09E-01	8.76E-06	6.95E-05	8.76E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Benzene	71-43-2	2.81E-04	4.04E-09	3.20E-08	4.03E-09
		Cumene	98-82-8	1.03E-02	1.47E-07	1.17E-06	1.47E-07
		Cyclohexane	110-82-7	1.01E-01	1.46E-06	1.16E-05	1.46E-06
		Ethyl benzene	100-41-4	6.23E-02	8.97E-07	7.12E-06	8.97E-07
		Hexane	110-54-3	5.90E-01	8.49E-06	6.74E-05	8.49E-06
		Hydrogen sulfide	7783-06-4	7.25E-03	1.04E-07	8.28E-07	1.04E-07
		Isoprene, except from vegetative	78-79-5	4.92E-03	7.08E-08	5.62E-07	7.08E-08
		Methanol	67-56-1	2.97E-03	4.28E-08	3.39E-07	4.27E-08
		Naphthalene	91-20-3	2.58E-02	3.71E-07	2.94E-06	3.70E-07
		Toluene	108-88-3	1.67E-01	2.40E-06	1.91E-05	2.41E-06
		Xylenes (mixed)	1330-20-7	5.04E-01	7.26E-06	5.76E-05	7.26E-06
T25009	Tank 25009	1,2,4-Trimethylbenzene	95-63-6	1.23E+01	1.77E-04	1.40E-03	1.77E-04
		2,2,4-Trimethylpentane	540-84-1	4.58E+01	6.58E-04	5.22E-03	6.58E-04
		Benzene	71-43-2	6.11E+00	8.79E-05	6.98E-04	8.79E-05
		Cumene	98-82-8	7.46E-02	1.07E-06	8.51E-06	1.07E-06
		Cyclohexane	110-82-7	2.36E+00	3.39E-05	2.69E-04	3.39E-05
		Ethyl benzene	100-41-4	1.89E+00	2.72E-05	2.16E-04	2.72E-05
		Hexane	110-54-3	4.32E+01	6.22E-04	4.93E-03	6.22E-04
		Methanol	67-56-1	2.24E-01	3.22E-06	2.55E-05	3.21E-06
		Naphthalene	91-20-3	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Toluene	108-88-3	1.14E+01	1.64E-04	1.30E-03	1.64E-04
		Xylenes (mixed)	1330-20-7	3.18E+01	4.58E-04	3.63E-03	4.58E-04
T3001	Tank 3001	1,2,4-Trimethylbenzene	95-63-6	1.95E+00	2.80E-05	2.23E-04	2.80E-05
		2,2,4-Trimethylpentane	540-84-1	3.18E+00	4.58E-05	3.63E-04	4.58E-05
		Benzene	71-43-2	4.31E-01	6.20E-06	4.92E-05	6.20E-06
		Cumene	98-82-8	5.99E-02	8.61E-07	6.83E-06	8.61E-07
		Cyclohexane	110-82-7	5.05E-01	7.26E-06	5.76E-05	7.26E-06
		Ethyl benzene	100-41-4	3.57E-01	5.14E-06	4.08E-05	5.14E-06

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	2.86E+00	4.11E-05	3.26E-04	4.11E-05
		Hydrogen sulfide	7783-06-4	3.24E-02	4.65E-07	3.69E-06	4.65E-07
		Isoprene, except from vegetative	78-79-5	2.26E-02	3.24E-07	2.57E-06	3.24E-07
		Methanol	67-56-1	1.46E-02	2.10E-07	1.66E-06	2.09E-07
		Naphthalene	91-20-3	1.53E-01	2.20E-06	1.75E-05	2.21E-06
		Toluene	108-88-3	9.09E-01	1.31E-05	1.04E-04	1.31E-05
		Xylenes (mixed)	1330-20-7	2.90E+00	4.18E-05	3.31E-04	4.18E-05
T35001	Tank 35001	1,2,4-Trimethylbenzene	95-63-6	6.91E+00	9.94E-05	7.89E-04	9.94E-05
		Benzene	71-43-2	1.91E-01	2.75E-06	2.18E-05	2.75E-06
		Cumene	98-82-8	3.46E-01	4.98E-06	3.95E-05	4.98E-06
		Cyclohexane	110-82-7	4.28E+00	6.15E-05	4.88E-04	6.15E-05
		Ethyl benzene	100-41-4	1.43E+00	2.06E-05	1.63E-04	2.06E-05
		Hexane	110-54-3	9.66E-02	1.39E-06	1.10E-05	1.39E-06
		Hydrogen sulfide	7783-06-4	1.76E-01	2.53E-06	2.01E-05	2.53E-06
		Isoprene, except from vegetative	78-79-5	4.48E-01	6.44E-06	5.11E-05	6.44E-06
		Naphthalene	91-20-3	2.49E-01	3.58E-06	2.84E-05	3.58E-06
		Toluene	108-88-3	5.05E-01	7.27E-06	5.77E-05	7.27E-06
		Xylenes (mixed)	1330-20-7	4.17E+00	6.00E-05	4.76E-04	6.00E-05
T50001	Tank 50001	1,2,4-Trimethylbenzene	95-63-6	1.83E+01	2.63E-04	2.09E-03	2.63E-04
		2,2,4-Trimethylpentane	540-84-1	8.10E+01	1.17E-03	9.25E-03	1.17E-03
		Benzene	71-43-2	1.15E+01	1.65E-04	1.31E-03	1.65E-04
		Cumene	98-82-8	1.13E-01	1.62E-06	1.29E-05	1.63E-06
		Cyclohexane	110-82-7	4.44E+00	6.39E-05	5.07E-04	6.39E-05
		Ethyl benzene	100-41-4	2.95E+00	4.24E-05	3.36E-04	4.24E-05
		Hexane	110-54-3	8.43E+01	1.21E-03	9.63E-03	1.21E-03
		Methanol	67-56-1	4.30E-01	6.19E-06	4.91E-05	6.19E-06
		Naphthalene	91-20-3	1.13E+00	1.62E-05	1.29E-04	1.62E-05
		Toluene	108-88-3	1.91E+01	2.75E-04	2.18E-03	2.75E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Xylenes (mixed)	1330-20-7	4.92E+01	7.08E-04	5.62E-03	7.08E-04
T50002	Tank 50002	1,2,4-Trimethylbenzene	95-63-6	1.83E+01	2.63E-04	2.09E-03	2.63E-04
		2,2,4-Trimethylpentane	540-84-1	8.10E+01	1.17E-03	9.25E-03	1.17E-03
		Benzene	71-43-2	1.15E+01	1.65E-04	1.31E-03	1.65E-04
		Cumene	98-82-8	1.13E-01	1.62E-06	1.29E-05	1.63E-06
		Cyclohexane	110-82-7	4.44E+00	6.39E-05	5.07E-04	6.39E-05
		Ethyl benzene	100-41-4	2.95E+00	4.24E-05	3.36E-04	4.24E-05
		Hexane	110-54-3	8.43E+01	1.21E-03	9.63E-03	1.21E-03
		Methanol	67-56-1	4.30E-01	6.19E-06	4.91E-05	6.19E-06
		Naphthalene	91-20-3	1.13E+00	1.62E-05	1.29E-04	1.62E-05
		Toluene	108-88-3	1.91E+01	2.75E-04	2.18E-03	2.75E-04
		Xylenes (mixed)	1330-20-7	4.92E+01	7.08E-04	5.62E-03	7.08E-04
T50003	Tank 50003	1,2,4-Trimethylbenzene	95-63-6	1.51E+02	2.17E-03	1.72E-02	2.17E-03
		Benzene	71-43-2	6.23E+01	8.96E-04	7.11E-03	8.96E-04
		Cumene	98-82-8	1.63E+01	2.34E-04	1.86E-03	2.34E-04
		Cyclohexane	110-82-7	1.41E+03	2.02E-02	1.61E-01	2.02E-02
		Ethyl benzene	100-41-4	1.28E+02	1.84E-03	1.46E-02	1.84E-03
		Hexane	110-54-3	3.52E+01	5.06E-04	4.02E-03	5.06E-04
		Hydrogen sulfide	7783-06-4	7.91E+01	1.14E-03	9.03E-03	1.14E-03
		Isoprene, except from vegetative	78-79-5	1.90E+02	2.73E-03	2.17E-02	2.73E-03
		Naphthalene	91-20-3	6.91E-01	9.95E-06	7.89E-05	9.94E-06
		Toluene	108-88-3	9.86E+01	1.42E-03	1.13E-02	1.42E-03
		Xylenes (mixed)	1330-20-7	3.34E+02	4.80E-03	3.81E-02	4.80E-03
T50004	Tank 50004	1,2,4-Trimethylbenzene	95-63-6	8.59E+00	1.24E-04	9.81E-04	1.24E-04
		Benzene	71-43-2	2.02E-01	2.91E-06	2.31E-05	2.91E-06
		Cumene	98-82-8	4.25E-01	6.12E-06	4.85E-05	6.11E-06
		Cyclohexane	110-82-7	4.53E+00	6.51E-05	5.17E-04	6.51E-05
		Ethyl benzene	100-41-4	1.72E+00	2.48E-05	1.97E-04	2.48E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	1.00E-01	1.44E-06	1.14E-05	1.44E-06
		Hydrogen sulfide	7783-06-4	1.70E-01	2.44E-06	1.94E-05	2.44E-06
		Isoprene, except from vegetative	78-79-5	4.45E-01	6.39E-06	5.07E-05	6.39E-06
		Naphthalene	91-20-3	3.12E-01	4.48E-06	3.56E-05	4.49E-06
		Toluene	108-88-3	5.77E-01	8.29E-06	6.58E-05	8.29E-06
		Xylenes (mixed)	1330-20-7	5.05E+00	7.26E-05	5.76E-04	7.26E-05
T50005	Tank 50005 - Vents to carbon	1,2,4-Trimethylbenzene	95-63-6	7.85E+00	1.13E-04	8.97E-04	1.13E-04
		Benzene	71-43-2	3.08E+00	4.43E-05	3.51E-04	4.43E-05
		Cumene	98-82-8	8.39E-01	1.21E-05	9.58E-05	1.21E-05
		Cyclohexane	110-82-7	6.93E+01	9.97E-04	7.92E-03	9.97E-04
		Ethyl benzene	100-41-4	6.51E+00	9.36E-05	7.43E-04	9.36E-05
		Hexane	110-54-3	1.73E+00	2.48E-05	1.97E-04	2.48E-05
		Hydrogen sulfide	7783-06-4	3.70E+00	5.33E-05	4.23E-04	5.33E-05
		Isoprene, except from vegetative	78-79-5	9.15E+00	1.32E-04	1.04E-03	1.32E-04
		Naphthalene	91-20-3	3.69E-02	5.31E-07	4.21E-06	5.30E-07
		Toluene	108-88-3	4.94E+00	7.11E-05	5.64E-04	7.11E-05
		Xylenes (mixed)	1330-20-7	1.70E+01	2.45E-04	1.94E-03	2.45E-04
T50006	Tank 50006 - Vents to carbon	1,2,4-Trimethylbenzene	95-63-6	7.85E+00	1.13E-04	8.97E-04	1.13E-04
		Benzene	71-43-2	3.08E+00	4.43E-05	3.51E-04	4.43E-05
		Cumene	98-82-8	8.39E-01	1.21E-05	9.58E-05	1.21E-05
		Cyclohexane	110-82-7	6.93E+01	9.97E-04	7.92E-03	9.97E-04
		Ethyl benzene	100-41-4	6.51E+00	9.36E-05	7.43E-04	9.36E-05
		Hexane	110-54-3	1.73E+00	2.48E-05	1.97E-04	2.48E-05
		Hydrogen sulfide	7783-06-4	3.70E+00	5.33E-05	4.23E-04	5.33E-05
		Isoprene, except from vegetative	78-79-5	9.15E+00	1.32E-04	1.04E-03	1.32E-04
		Naphthalene	91-20-3	3.69E-02	5.31E-07	4.21E-06	5.30E-07
		Toluene	108-88-3	4.94E+00	7.11E-05	5.64E-04	7.11E-05
		Xylenes (mixed)	1330-20-7	1.70E+01	2.45E-04	1.94E-03	2.45E-04

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
T50008	Tank 50008	1,2,4-Trimethylbenzene	95-63-6	4.97E+00	7.15E-05	5.68E-04	7.15E-05
		Benzene	71-43-2	9.80E-02	1.41E-06	1.12E-05	1.41E-06
		Cumene	98-82-8	2.43E-01	3.50E-06	2.77E-05	3.49E-06
		Cyclohexane	110-82-7	2.19E+00	3.15E-05	2.50E-04	3.15E-05
		Ethyl benzene	100-41-4	9.64E-01	1.39E-05	1.10E-04	1.39E-05
		Hexane	110-54-3	4.72E-02	6.78E-07	5.38E-06	6.78E-07
		Hydrogen sulfide	7783-06-4	7.65E-02	1.10E-06	8.74E-06	1.10E-06
		Isoprene, except from vegetative	78-79-5	2.01E-01	2.89E-06	2.30E-05	2.90E-06
		Naphthalene	91-20-3	1.82E-01	2.62E-06	2.08E-05	2.62E-06
		Toluene	108-88-3	3.04E-01	4.38E-06	3.47E-05	4.37E-06
		Xylenes (mixed)	1330-20-7	2.84E+00	4.08E-05	3.24E-04	4.08E-05
T518	Tank 518	1,2,4-Trimethylbenzene	95-63-6	1.44E+00	2.08E-05	1.65E-04	2.08E-05
		Benzene	71-43-2	6.00E-01	8.64E-06	6.85E-05	8.63E-06
		Cumene	98-82-8	1.56E-01	2.25E-06	1.78E-05	2.24E-06
		Cyclohexane	110-82-7	1.36E+01	1.95E-04	1.55E-03	1.95E-04
		Ethyl benzene	100-41-4	1.23E+00	1.76E-05	1.40E-04	1.76E-05
		Hexane	110-54-3	3.40E-01	4.88E-06	3.88E-05	4.89E-06
		Hydrogen sulfide	7783-06-4	7.68E-01	1.10E-05	8.77E-05	1.11E-05
		Isoprene, except from vegetative	78-79-5	1.83E+00	2.64E-05	2.09E-04	2.64E-05
		Naphthalene	91-20-3	6.60E-03	9.50E-08	7.54E-07	9.50E-08
		Toluene	108-88-3	9.49E-01	1.36E-05	1.08E-04	1.36E-05
		Xylenes (mixed)	1330-20-7	3.20E+00	4.61E-05	3.66E-04	4.61E-05
T6001	Tank 6001	1,2,4-Trimethylbenzene	95-63-6	3.20E+00	4.60E-05	3.65E-04	4.60E-05
		2,2,4-Trimethylpentane	540-84-1	1.09E+01	1.56E-04	1.24E-03	1.56E-04
		Benzene	71-43-2	2.94E+00	4.23E-05	3.35E-04	4.23E-05
		Cumene	98-82-8	3.89E-01	5.60E-06	4.44E-05	5.59E-06
		Cyclohexane	110-82-7	1.57E+01	2.25E-04	1.79E-03	2.25E-04
		Ethyl benzene	100-41-4	3.32E+00	4.78E-05	3.79E-04	4.78E-05

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	1.11E+01	1.60E-04	1.27E-03	1.60E-04
		Hydrogen sulfide	7783-06-4	6.78E+00	9.75E-05	7.74E-04	9.75E-05
		Naphthalene	91-20-3	6.76E-02	9.72E-07	7.71E-06	9.71E-07
		Toluene	108-88-3	6.97E+00	1.00E-04	7.96E-04	1.00E-04
		Xylenes (mixed)	1330-20-7	8.15E+00	1.17E-04	9.31E-04	1.17E-04
T6002	Tank 6002	1,2,4-Trimethylbenzene	95-63-6	3.20E+00	4.60E-05	3.65E-04	4.60E-05
		2,2,4-Trimethylpentane	540-84-1	1.09E+01	1.56E-04	1.24E-03	1.56E-04
		Benzene	71-43-2	2.94E+00	4.23E-05	3.35E-04	4.23E-05
		Cumene	98-82-8	3.89E-01	5.60E-06	4.44E-05	5.59E-06
		Cyclohexane	110-82-7	1.57E+01	2.25E-04	1.79E-03	2.25E-04
		Ethyl benzene	100-41-4	3.32E+00	4.78E-05	3.79E-04	4.78E-05
		Hexane	110-54-3	1.11E+01	1.60E-04	1.27E-03	1.60E-04
		Hydrogen sulfide	7783-06-4	6.78E+00	9.75E-05	7.74E-04	9.75E-05
		Naphthalene	91-20-3	6.76E-02	9.72E-07	7.71E-06	9.71E-07
		Toluene	108-88-3	6.97E+00	1.00E-04	7.96E-04	1.00E-04
		Xylenes (mixed)	1330-20-7	8.15E+00	1.17E-04	9.31E-04	1.17E-04
TKFUG	Tank Farm piping component	1,2,4-Trimethylbenzene	95-63-6	8.19E+01	1.18E-03	9.34E-03	1.18E-03
		Benzene	71-43-2	6.54E-01	9.40E-06	7.46E-05	9.40E-06
		Cumene	98-82-8	3.86E+00	5.55E-05	4.40E-04	5.55E-05
		Cyclohexane	110-82-7	1.43E+01	2.06E-04	1.64E-03	2.06E-04
		Ethyl benzene	100-41-4	1.43E+01	2.05E-04	1.63E-03	2.05E-04
		Hexane	110-54-3	2.29E-01	3.30E-06	2.62E-05	3.30E-06
		Hydrogen sulfide	7783-06-4	4.65E-03	6.69E-08	5.31E-07	6.69E-08
		Isoprene, except from vegetative	78-79-5	3.27E-01	4.71E-06	3.74E-05	4.71E-06
		Naphthalene	91-20-3	3.08E+00	4.43E-05	3.51E-04	4.43E-05
		Toluene	108-88-3	3.56E+00	5.12E-05	4.07E-04	5.12E-05
		Xylenes (mixed)	1330-20-7	4.27E+01	6.14E-04	4.87E-03	6.14E-04
TRK_1&2	Track 1&2: Vents to H-907	Benzene	71-43-2	5.27E-06	7.58E-11	1.92E-08	2.42E-09

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Hexane	110-54-3	4.03E-07	5.80E-12	1.49E-09	1.88E-10
		Toluene	108-88-3	1.29E-05	1.86E-10	4.56E-08	5.75E-09
		Xylenes (mixed)	1330-20-7	5.08E-06	7.31E-11	1.79E-08	2.26E-09
TRUCKS	Onsite Diesel Trucks	Diesel engine exhaust, particulate	9901	2.12E+00	3.05E-05	4.35E-04	5.48E-05
WW_EXIST	Wastewater Treatment - Existing	1,2,4-Trimethylbenzene	95-63-6	7.29E+00	1.05E-04	1.19E-03	1.50E-04
		2,2,4-Trimethylpentane	540-84-1	1.92E+02	2.76E-03	2.85E-02	3.59E-03
		Benzene	71-43-2	3.64E+01	5.23E-04	5.35E-03	6.75E-04
		Cumene	98-82-8	4.97E-01	7.14E-06	7.93E-05	9.99E-06
		Cyclohexane	110-82-7	4.31E+01	6.20E-04	6.31E-03	7.95E-04
		Ethyl benzene	100-41-4	5.91E+00	8.50E-05	9.24E-04	1.16E-04
		Hexane	110-54-3	2.87E+02	4.13E-03	4.16E-02	5.25E-03
		Hydrogen sulfide	7783-06-4	4.72E+00	6.78E-05	6.20E-04	7.81E-05
		Isoprene, except from vegetative	78-79-5	2.94E+00	4.24E-05	4.13E-04	5.20E-05
		Methanol	67-56-1	1.36E+00	1.96E-05	2.06E-04	2.60E-05
		Naphthalene	91-20-3	7.14E-02	1.03E-06	1.21E-05	1.52E-06
		Toluene	108-88-3	3.76E+01	5.41E-04	5.70E-03	7.18E-04
		Xylenes (mixed)	1330-20-7	4.26E+01	6.12E-04	6.67E-03	8.40E-04
WW_NEW	Wastewater Treatment - New	1,2,4-Trimethylbenzene	95-63-6	6.46E-01	9.28E-06	1.05E-04	1.33E-05
		2,2,4-Trimethylpentane	540-84-1	1.70E+01	2.44E-04	2.52E-03	3.18E-04
		Benzene	71-43-2	3.22E+00	4.63E-05	4.74E-04	5.98E-05
		Cumene	98-82-8	4.40E-02	6.33E-07	7.03E-06	8.86E-07
		Cyclohexane	110-82-7	3.82E+00	5.49E-05	5.59E-04	7.04E-05
		Ethyl benzene	100-41-4	5.24E-01	7.53E-06	8.19E-05	1.03E-05
		Hexane	110-54-3	2.54E+01	3.66E-04	3.69E-03	4.65E-04
		Hydrogen sulfide	7783-06-4	4.18E-01	6.01E-06	5.49E-05	6.92E-06
		Isoprene, except from vegetative	78-79-5	2.61E-01	3.75E-06	3.66E-05	4.61E-06
		Methanol	67-56-1	1.21E-01	1.73E-06	1.83E-05	2.31E-06
		Naphthalene	91-20-3	6.33E-03	9.10E-08	1.08E-06	1.36E-07

Table C-4. Post-Project Potential-to-Emit by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Toluene	108-88-3	3.33E+00	4.79E-05	5.05E-04	6.36E-05
		Xylenes (mixed)	1330-20-7	3.77E+00	5.42E-05	5.91E-04	7.44E-05
UPRAIL	Union Pacific Locomotive	Diesel engine exhaust (Diesel PM)	9901	2.70E+01	3.89E-04	4.06E-02	5.12E-03

EXHIBIT D. WINDROSE

Figure D-1. Windrose

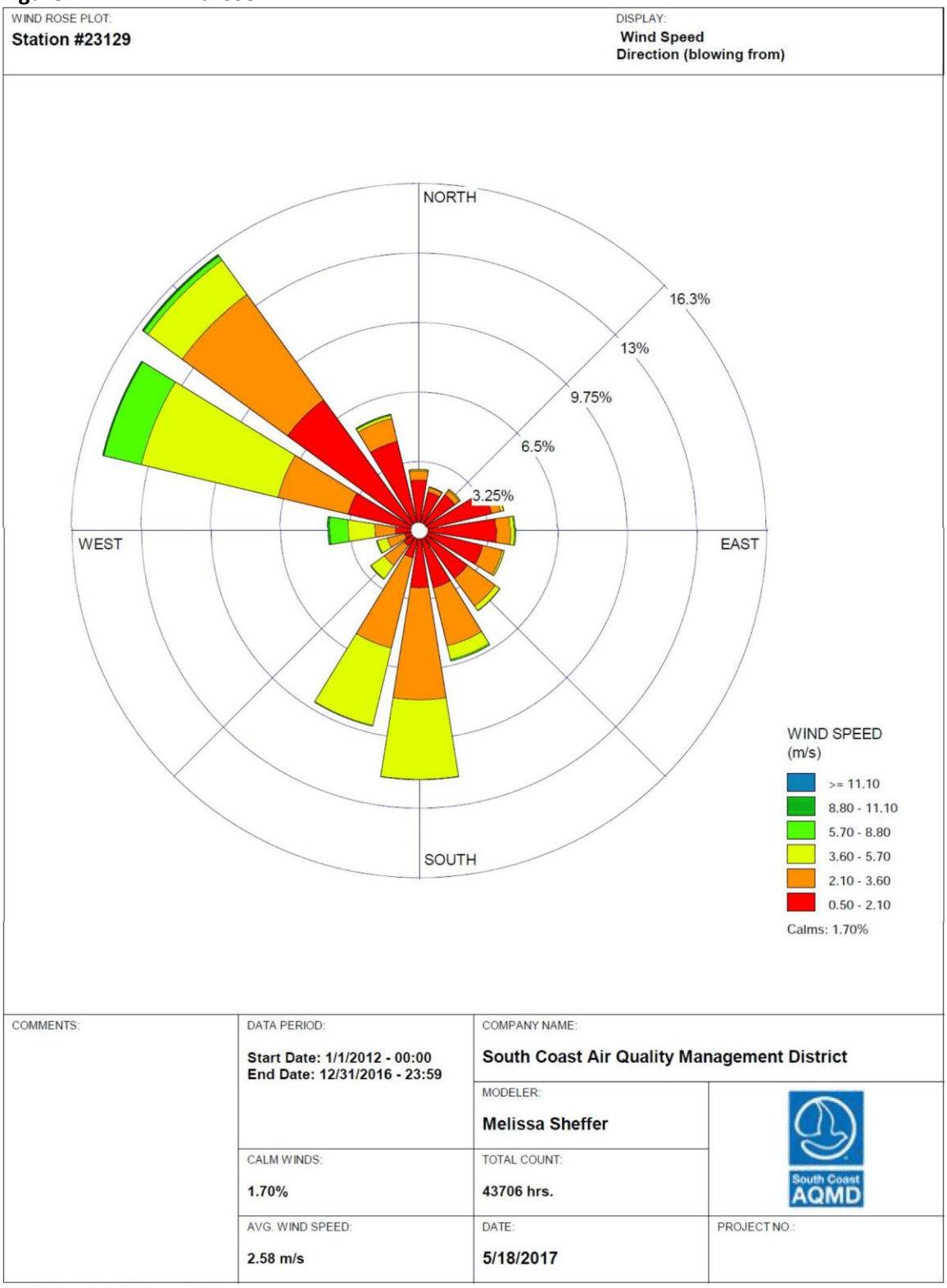


EXHIBIT E. SENSITIVE RECEPTORS

Table E-1. Description and Location of Sensitive Receptors

Description	Address	Rec. #	UTM Coordinates (NAD83) Easting/Northing (m)	(m)
Wirtz Elementary School	8535 Contreras St, Paramount, CA 90723	1	393649.1	3751859.0
Paramount High School	14429 Downey Ave, Paramount, CA 90723	2	393497.2	3751655.4
Albert Baxter Elementary School	14929 Cerritos Ave, Bellflower, CA 90706	3	394491.8	3751457.3
Jefferson Elementary School	8600 Jefferson St, Paramount, CA 90723	4	393779.4	3750835.8
Progress Park	15509 Naranja Ave, Paramount, CA 90723	5	393689.8	3750768.0
Alondra Middle School	16200 Downey Ave, Paramount, CA 90723	6	393718.3	3750251.0
Abraham Lincoln School	15324 California Ave, Paramount, CA 90723	7	392934.0	3751055.7
Paramount Park Middle School	14608 Paramount Blvd, Paramount, CA 90723	8	393067.0	3751689.4
Paramount Park	14400 Paramount Blvd, Paramount, CA 90723	9	392908.2	3751850.8
Roosevelt Elementary School	13451 Merkel Ave, Paramount, CA 90723	10	393023.6	3752726.1
Golden Park	8840 Golden St, Downey, CA 90242	11	393957.2	3752418.0
Kaiser Permanente Bellflower Medical Center	9400 Rosecrans Ave, Bellflower, CA 90706	12	395179.8	3751878.0

EXHIBIT F. RECEPTOR GRID DIAGRAMS

Figure F-1. All Receptor Locations

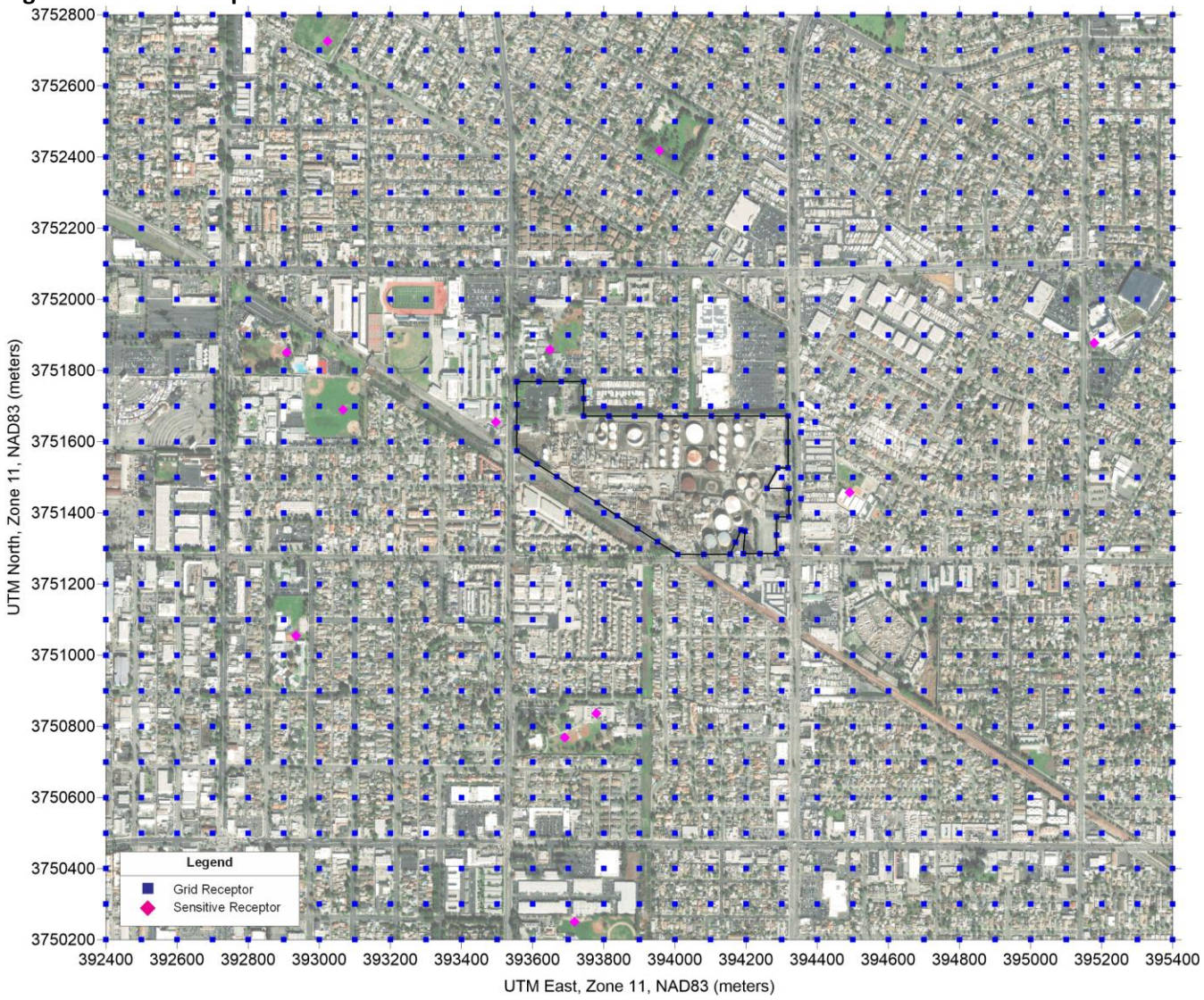


Figure F-2. Census Tract Centroids Receptor Grid

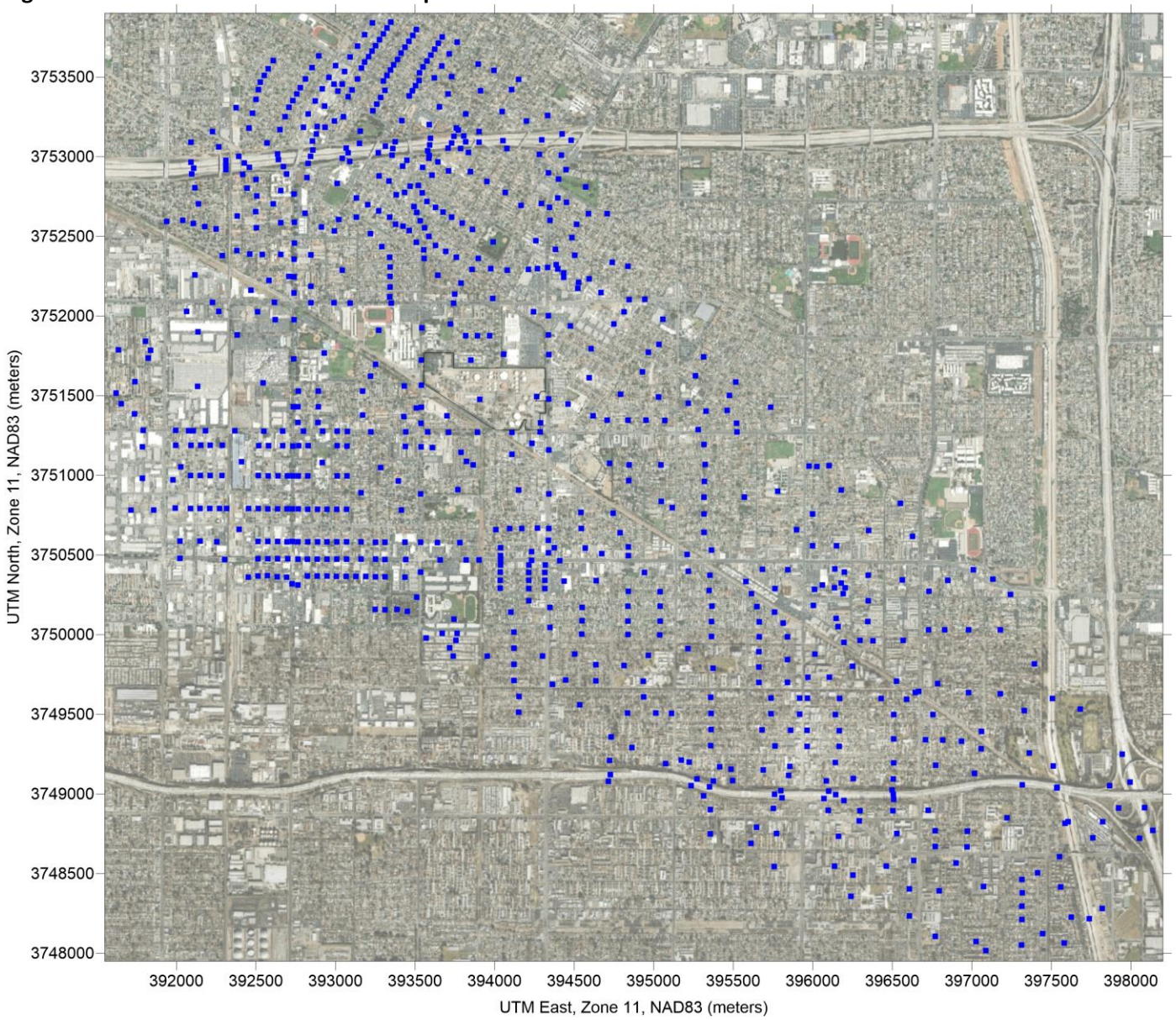


EXHIBIT G. RISK CONTRIBUTION BY SUBSTANCE

Table G-1. Pre-Project Cancer Risk by Substance at MEIR, MEIW, and Maximum Sensitive Receptors

Pollutant	CAS Number	MEIR		MEIW		Maximum Sensitive Receptor	
		Total risk	Fraction	Total risk	Fraction	Total risk	Fraction
Benzene	71432	1.40E-06	36.9%	2.16E-07	48.1%	9.15E-07	31.5%
Diesel Exhaust Particulate	9-90-1	1.13E-06	29.7%	1.64E-07	36.4%	9.11E-07	31.3%
PAHs	1151	8.00E-07	21.1%	2.70E-08	6.0%	6.96E-07	23.9%
Chromium (VI)	18540-29-9	3.40E-07	9.0%	2.58E-08	5.7%	2.94E-07	10.1%
Ethyl Benzene	100-41-4	4.94E-08	1.3%	8.44E-09	1.9%	3.20E-08	1.1%
Cadmium	7440-43-9	2.25E-08	0.6%	2.66E-09	0.6%	1.96E-08	0.7%
Formaldehyde	50-00-0	1.83E-08	0.5%	2.16E-09	0.5%	1.58E-08	0.5%
Naphthalene	91-20-3	1.74E-08	0.5%	2.59E-09	0.6%	1.11E-08	0.4%
7,12-Dimethylbenz(a)anthracene	57-97-6	1.06E-08	0.3%	3.99E-10	0.1%	9.13E-09	0.3%
Benzo(a)pyrene	50-32-8	1.35E-09	0.0%	5.75E-11	0.0%	1.04E-09	0.0%
Nickel	7440-02-0	1.31E-09	0.0%	1.55E-10	0.0%	1.15E-09	0.0%
Dibenzo(a,h)anthracene	53-70-3	5.36E-10	0.0%	2.04E-11	0.0%	4.55E-10	0.0%
Acetaldehyde	75-07-0	4.35E-10	0.0%	5.14E-11	0.0%	3.76E-10	0.0%
Benzo(a)anthracene	56-55-3	3.43E-10	0.0%	1.65E-11	0.0%	2.48E-10	0.0%
Benzo(k)fluoranthene	207-08-9	2.62E-10	0.0%	1.34E-11	0.0%	1.82E-10	0.0%
Propylene Oxide	75-56-9	2.49E-10	0.0%	2.95E-11	0.0%	2.14E-10	0.0%
Benzo(b)fluoranthene	205-99-2	2.25E-10	0.0%	1.13E-11	0.0%	1.59E-10	0.0%
1,3-Butadiene	106-99-0	1.71E-10	0.0%	2.02E-11	0.0%	1.46E-10	0.0%
Indeno(1,2,3-c,d)pyrene	193-39-5	1.43E-10	0.0%	4.83E-12	0.0%	1.22E-10	0.0%
3-Methylcholanthrene	56-49-5	1.05E-10	0.0%	3.95E-12	0.0%	9.03E-11	0.0%
Chrysene	218-01-9	2.93E-11	0.0%	1.32E-12	0.0%	2.20E-11	0.0%
Total		**3.79E-06**	**100.0%**	**4.49E-07**	**100.0%**	**2.91E-06**	**100.0%**

Table G-2. Post-Project Cancer Risk by Substance at MEIR, MEIW, and Maximum Sensitive Receptors

Pollutant	CAS Number	MEIR		MEIW		Maximum Sensitive Receptor	
		Total risk	Fraction	Total risk	Fraction	Total risk	Fraction
Benzene	71-43-2	6.4E-06	61.2%	1.3E-06	60.2%	3.5E-06	63.0%
Naphthalene	91-20-3	1.9E-06	18.5%	3.3E-07	15.5%	9.9E-07	17.9%
Diesel engine exhaust, particulate matter (Diesel PM)	9901	1.0E-06	9.8%	3.4E-07	16.2%	3.3E-07	5.9%
Ethyl benzene	100-41-4	6.6E-07	6.4%	1.6E-07	7.4%	3.7E-07	6.7%
7,12-Dimethylbenz[a]anthracene	57-97-6	4.1E-07	4.0%	1.3E-08	0.6%	3.5E-07	6.4%
3-Methylcholanthrene	56-49-5	4.1E-09	0.0%	1.3E-10	0.0%	3.5E-09	0.1%
Formaldehyde	50-00-0	2.1E-09	0.0%	2.2E-10	0.0%	1.7E-09	0.0%
Benzo[a]pyrene	50-32-8	1.4E-09	0.0%	4.2E-11	0.0%	1.2E-09	0.0%
Dibenz[a,h]anthracene	53-70-3	5.1E-10	0.0%	1.6E-11	0.0%	4.4E-10	0.0%
Acetaldehyde	75-07-0	2.5E-10	0.0%	2.7E-11	0.0%	2.1E-10	0.0%
Benz[a]anthracene	56-55-3	2.1E-10	0.0%	6.3E-12	0.0%	1.8E-10	0.0%
Benzo[b]fluoranthene	205-99-2	2.1E-10	0.0%	6.3E-12	0.0%	1.8E-10	0.0%
Benzo[k]fluoranthene	207-08-9	2.1E-10	0.0%	6.3E-12	0.0%	1.8E-10	0.0%
Indeno[1,2,3-cd]pyrene	193-39-5	2.1E-10	0.0%	6.3E-12	0.0%	1.8E-10	0.0%
Chrysene	218-01-9	2.1E-11	0.0%	6.3E-13	0.0%	1.8E-11	0.0%
Total		**1.0E-05**	**100.0%**	**2.1E-06**	**100.0%**	**5.5E-06**	**100.0%**

Table G-3. Pre-Project Chronic Risk by Substance at the Maximum Exposed Individual Receptor [16]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		HI	Fraction
Benzene	71432	1.27E-02	97.1%
Nickel	7440-02-0	3.59E-04	2.8%
Chromium (VI)	18540-29-9	1.76E-05	0.1%
Total		**1.30E-02**	**100.0%**

[16] To calculate maximum chronic risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway associated with the highest chronic risk at the maximum increase to an exposed individual receptor was the hematologic system (blood).

Table G-4. Post-Project Chronic Risk by Substance at the Maximum Exposed Individual Receptor[17]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		HI	Fraction
Hydrogen sulfide	7783-06-4	8.1E-02	45.1%
Sulfuric acid	7664-93-9	8.0E-02	44.2%
Ammonia	7664-41-7	1.1E-02	6.3%
Naphthalene	91-20-3	1.3E-03	0.7%
Silica, crystalline (respirable)	1175	7.1E-04	0.4%
Xylenes (mixed)	1330-20-7	6.5E-04	0.4%
Hydrochloric acid	7647-01-0	3.1E-04	0.2%
Acrolein	107-02-8	1.3E-04	0.1%
Diesel engine exhaust, particulate matter (Diesel PM)	9901	4.4E-05	0.0%
Formaldehyde	50-00-0	2.4E-05	0.0%
Propylene	115-07-1	2.3E-05	0.0%
Acetaldehyde	75-07-0	3.9E-07	0.0%
Total		**1.8E-01**	**100.00%**

[17] To calculate maximum chronic risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway associated with the highest chronic risk at the maximum increase to an exposed individual receptor was the respiratory system.

Table G-5. Pre-Project Acute Risk by Substance at Maximum Exposed Individual Receptor [18]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Benzene	71-43-2	3.33E-02	97.2%
Nickel	7440-02-0	9.77E-04	2.8%
Total		**3.43E-02**	**100.0%**

Table G-6. Post-Project Acute Risk by Substance at Maximum Exposed Individual Receptor [19]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Hydrogen sulfide	7783-06-4	9.3E-01	99.8%
Toluene	108-88-3	1.0E-03	0.1%
Xylenes (mixed)	1330-20-7	7.8E-04	0.1%
Methanol	67-56-1	2.9E-04	0.0%
Total		**9.3E-01**	**100.0%**

[18] To calculate maximum acute risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway with the highest acute risk at the maximum exposed individual receptor was the immune system.

[19] To calculate maximum acute risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway with the highest acute risk at the maximum exposed individual receptor was the central nervous system.

EXHIBIT H. RISK CONTRIBUTION BY SOURCE

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Onsite Railcar Mover	142	1.0E-06	27.4%	1.3E-07	30.0%	8.7E-07	29.8%
Heaters 303, 304, 305 & 306	25	5.1E-07	13.6%	2.3E-08	5.2%	4.6E-07	15.7%
T125001	78	2.2E-07	5.9%	3.1E-08	6.9%	1.3E-07	4.4%
T80003	137	1.2E-07	3.2%	2.5E-08	5.5%	7.7E-08	2.7%
Heater 602	29	1.1E-07	2.9%	6.4E-09	1.4%	9.1E-08	3.1%
T50001	111	1.1E-07	2.8%	9.2E-09	2.0%	6.3E-08	2.2%
T50003	113	1.0E-07	2.7%	2.1E-08	4.8%	7.2E-08	2.5%
T20005	90	7.2E-08	1.9%	1.0E-08	2.3%	4.5E-08	1.5%
HDS Fugitives	10	7.1E-08	1.9%	1.0E-08	2.2%	5.5E-08	1.9%
Heater 802	36	7.1E-08	1.9%	3.4E-09	0.7%	5.5E-08	1.9%
Heater 102	22	6.9E-08	1.8%	3.3E-09	0.7%	6.4E-08	2.2%
T25007	104	6.4E-08	1.7%	1.1E-08	2.5%	4.0E-08	1.4%
Load Racks 19,20, &21	47	6.2E-08	1.6%	1.7E-09	0.4%	4.1E-08	1.4%
T125002	79	6.0E-08	1.6%	9.3E-09	2.1%	4.2E-08	1.4%
T80002	136	5.6E-08	1.5%	1.1E-08	2.4%	4.4E-08	1.5%
Cogen	6	5.6E-08	1.5%	4.5E-09	1.0%	4.8E-08	1.6%
Heater 907	42	5.3E-08	1.4%	2.5E-09	0.6%	4.6E-08	1.6%
T25006	103	5.2E-08	1.4%	7.0E-09	1.6%	3.1E-08	1.1%
T25005	102	5.0E-08	1.3%	5.4E-09	1.2%	2.9E-08	1.0%
T10007	61	5.0E-08	1.3%	9.5E-09	2.1%	3.0E-08	1.0%
Heater 805	37	3.8E-08	1.0%	1.8E-09	0.4%	2.4E-08	0.8%
Northern Loop	141	3.8E-08	1.0%	9.6E-09	2.1%	1.2E-08	0.4%
TF-02 Fugitives	13	3.2E-08	0.9%	5.2E-09	1.2%	1.4E-08	0.5%
Offsite Rail Mover	146	3.2E-08	0.8%	1.4E-08	3.2%	2.5E-08	0.9%
Heater 902	40	2.9E-08	0.8%	1.1E-09	0.2%	2.7E-08	0.9%

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Heater 801	35	2.8E-08	0.7%	1.3E-09	0.3%	2.1E-08	0.7%
Heater 302	24	2.5E-08	0.7%	1.1E-09	0.3%	2.2E-08	0.8%
Heater 860	38	2.5E-08	0.7%	1.2E-09	0.3%	2.4E-08	0.8%
Boiler 7	2	2.5E-08	0.6%	1.2E-09	0.3%	2.0E-08	0.7%
Jet Unit Fugitives	11	2.4E-08	0.6%	4.2E-09	0.9%	1.7E-08	0.6%
Heater 704	33	2.3E-08	0.6%	1.0E-09	0.2%	2.6E-08	0.9%
Heater 402	26	2.2E-08	0.6%	1.0E-09	0.2%	1.9E-08	0.6%
Naphtha Splitter Fugitives	52	2.2E-08	0.6%	3.6E-09	0.8%	1.6E-08	0.5%
Heater 101	21	2.2E-08	0.6%	1.0E-09	0.2%	1.8E-08	0.6%
T10008	62	2.1E-08	0.6%	4.2E-09	0.9%	1.5E-08	0.5%
T50004	114	2.1E-08	0.6%	3.0E-09	0.7%	1.6E-08	0.5%
T10005	59	2.1E-08	0.6%	4.4E-09	1.0%	1.4E-08	0.5%
Crude Unit Fugitives 1	8	2.1E-08	0.5%	3.3E-09	0.7%	1.5E-08	0.5%
T10006	60	2.0E-08	0.5%	4.2E-09	0.9%	1.3E-08	0.4%
Crude Unit Fugitives 2	9	1.7E-08	0.5%	2.5E-09	0.6%	1.3E-08	0.5%
Heater 702	31	1.6E-08	0.4%	8.5E-10	0.2%	1.5E-08	0.5%
Heater 701	30	1.5E-08	0.4%	8.0E-10	0.2%	1.4E-08	0.5%
T25004	101	1.4E-08	0.4%	2.1E-09	0.5%	1.1E-08	0.4%
Heater 705	34	1.4E-08	0.4%	5.9E-10	0.1%	1.5E-08	0.5%
T25001	98	1.4E-08	0.4%	1.9E-09	0.4%	1.0E-08	0.3%
T25003	100	1.3E-08	0.3%	1.9E-09	0.4%	9.8E-09	0.3%
T25002	99	1.2E-08	0.3%	1.8E-09	0.4%	9.1E-09	0.3%
Heater 501/502	27	9.9E-09	0.3%	7.1E-10	0.2%	8.8E-09	0.3%
TF-05 Fugitives	16	9.5E-09	0.3%	2.0E-09	0.4%	5.6E-09	0.2%
Heater 905	41	9.3E-09	0.2%	6.1E-10	0.1%	7.9E-09	0.3%
Southern Loop	143	9.1E-09	0.2%	2.4E-09	0.5%	4.6E-09	0.2%
Pipe Fugitives from Tanks	138	9.0E-09	0.2%	5.5E-09	1.2%	5.3E-09	0.2%
Boiler 9	4	8.8E-09	0.2%	3.9E-10	0.1%	7.1E-09	0.2%

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Middle Loop	140	8.7E-09	0.2%	2.4E-09	0.5%	4.3E-09	0.1%
Heater 301	23	7.7E-09	0.2%	2.8E-10	0.1%	6.6E-09	0.2%
LSR Chiller Unit Fugitives	51	7.5E-09	0.2%	1.2E-09	0.3%	5.5E-09	0.2%
Gasoline Blender Fugitives	20	7.2E-09	0.2%	1.1E-09	0.3%	5.4E-09	0.2%
TF-04 Fugitives	15	6.9E-09	0.2%	1.4E-09	0.3%	4.4E-09	0.2%
5HDSPENEX Unit	1	6.4E-09	0.2%	9.8E-10	0.2%	4.8E-09	0.2%
Ben Sat Unit Fugitives	5	6.4E-09	0.2%	9.8E-10	0.2%	4.8E-09	0.2%
Naptha Stripper Fugitives	53	6.3E-09	0.2%	9.5E-10	0.2%	4.8E-09	0.2%
T3001	108	5.9E-09	0.2%	9.7E-10	0.2%	4.6E-09	0.2%
Boiler 8	3	5.9E-09	0.2%	2.8E-10	0.1%	4.7E-09	0.2%
Load Racks 3,4,5, & 23	48	5.2E-09	0.1%	8.6E-10	0.2%	3.8E-09	0.1%
T80001	135	4.8E-09	0.1%	1.0E-09	0.2%	3.8E-09	0.1%
TF-00-101 Fugitives	12	4.4E-09	0.1%	8.9E-10	0.2%	3.1E-09	0.1%
TF-03 Fugitives	14	4.0E-09	0.1%	6.6E-10	0.1%	2.9E-09	0.1%
TK-07 Fugitives	17	4.0E-09	0.1%	7.4E-10	0.2%	2.9E-09	0.1%
Heater 703	32	3.9E-09	0.1%	2.8E-10	0.1%	3.8E-09	0.1%
TF-08 Fugitives	18	3.8E-09	0.1%	6.5E-10	0.1%	2.7E-09	0.1%
T6002	132	3.4E-09	0.1%	5.2E-10	0.1%	2.7E-09	0.1%
T6001	131	3.2E-09	0.1%	4.9E-10	0.1%	2.6E-09	0.1%
Rail Loading	50	2.5E-09	0.1%	3.3E-10	0.1%	2.1E-09	0.1%
T50002	112	2.5E-09	0.1%	1.8E-10	0.0%	1.5E-09	0.1%
T25009	106	2.3E-09	0.1%	3.9E-10	0.1%	1.5E-09	0.1%
Cooling Tower 800 Group	145	2.3E-09	0.1%	3.4E-10	0.1%	1.5E-09	0.1%
T20004	89	1.8E-09	0.0%	2.6E-10	0.1%	1.1E-09	0.0%
TF-09 Fugitives	19	1.8E-09	0.0%	2.4E-10	0.1%	1.4E-09	0.0%
Asphalt Unit Fugitives	7	1.4E-09	0.0%	1.9E-10	0.0%	1.1E-09	0.0%
Cooling Tower 500 Group	144	1.2E-09	0.0%	1.5E-10	0.0%	8.5E-10	0.0%
T12502	81	3.2E-10	0.0%	5.7E-11	0.0%	2.2E-10	0.0%

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Heater 601	28	2.9E-10	0.0%	3.5E-11	0.0%	2.2E-10	0.0%
T12501	80	2.5E-10	0.0%	4.6E-11	0.0%	1.9E-10	0.0%
Wastewater Treatment	139	1.4E-10	0.0%	1.8E-11	0.0%	1.1E-10	0.0%
T25008	105	8.5E-11	0.0%	5.3E-12	0.0%	5.2E-11	0.0%
T5501	130	2.3E-11	0.0%	4.0E-12	0.0%	1.8E-11	0.0%
Load Rack 6,7, 8, &12	49	1.0E-11	0.0%	6.8E-13	0.0%	7.5E-12	0.0%
Load Racks 16, 17, & 18	46	9.6E-12	0.0%	6.3E-13	0.0%	7.0E-12	0.0%
Load Racks 11, 13, 15, & 26	44	7.3E-12	0.0%	4.2E-13	0.0%	5.7E-12	0.0%
T10009	63	7.0E-12	0.0%	9.2E-13	0.0%	5.8E-12	0.0%
T10001	56	6.6E-12	0.0%	8.5E-13	0.0%	5.5E-12	0.0%
Load Rack 1,2, & 14	45	6.5E-12	0.0%	2.1E-12	0.0%	3.9E-12	0.0%
Heater 901	39	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
LPG Load Rack 22	43	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T100001	54	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T100002	55	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T10003	57	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T10004	58	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1012	64	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1013	65	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1014	66	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1015	67	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1019	68	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1020	69	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1021	70	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1022	71	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1023	72	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1024	73	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1025	74	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
T1026	75	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1027	76	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T1028	77	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T141	82	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T142	83	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T150001	84	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T150002	85	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T20001	86	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T20002	87	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T20003	88	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2014	91	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T203	92	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2044	93	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2046	94	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2047	95	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2048	96	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2049	97	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T2501	107	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T35001	109	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T3501	110	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T50005	115	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T50006	116	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T50007	117	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T50008	118	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5001	119	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5002	120	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5003	121	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5004	122	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%

Table H-1. Pre-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
T5005	123	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5006	124	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T5007	125	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T509	126	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T512	127	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T513	128	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T514	129	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T776	133	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
T777	134	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Total		**3.8E-06**	**100.0%**	**4.5E-07**	**100.0%**	**2.9E-06**	**100.0%**

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Tank Farm TF-02 piping component fugitives	FUGTKFM2	2.4E-06	22.4%	3.9E-07	22.1%	1.0E-06	17.9%
Fugitive Components - Tank Truck Loading Rack No. 20	F_R20	1.0E-06	9.7%	2.6E-08	1.4%	5.4E-07	9.4%
Onsite Diesel Trucks	TRUCKS	1.0E-06	9.5%	2.5E-07	14.0%	3.3E-07	5.7%
Fugitive Components - Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21	F_R21	7.7E-07	7.2%	1.9E-08	1.1%	4.0E-07	6.9%
Tank 50003	T50003	6.1E-07	5.7%	1.3E-07	7.1%	4.2E-07	7.3%
Tank 25007	T25007	4.3E-07	4.1%	7.6E-08	4.3%	2.7E-07	4.7%
Union Pacific Locomotive	UPRAIL	3.1E-07	2.9%	1.1E-07	6.3%	2.0E-07	3.5%
Tank 50002	T50002	2.6E-07	2.4%	1.9E-08	1.1%	1.5E-07	2.6%
Heater H-151 (H2 plant)	H151	2.4E-07	2.2%	8.1E-09	0.5%	2.1E-07	3.6%
Tank Farm TF-03 piping component fugitives	FUGTKFM3	2.3E-07	2.1%	3.7E-08	2.1%	1.6E-07	2.8%
Tank 50005 - Vents to carbon canister	T50005	2.2E-07	2.1%	2.2E-07	12.5%	9.0E-08	1.6%
Tank 50001	T50001	2.2E-07	2.1%	1.9E-08	1.1%	1.3E-07	2.3%
Fugitive Components - Tank Truck Unloading Rack No. 2	F_R2	2.1E-07	2.0%	5.3E-09	0.3%	1.1E-07	1.9%
Tank Farm TF-05 piping component fugitives	FUGTKFM5	2.1E-07	2.0%	4.4E-08	2.5%	1.2E-07	2.1%
Fugitive Components - Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21	F_VR	2.0E-07	1.9%	8.6E-09	0.5%	9.4E-08	1.6%
Tank 150001 - Vents to carbon canister	T150001	1.9E-07	1.8%	3.9E-08	2.2%	1.1E-07	1.9%
Fugitive Components - In-Line Gasoline Blending	F_INLN	1.9E-07	1.8%	3.0E-08	1.7%	1.4E-07	2.4%
Fugitive Components - Gasoline Blendstock Tank Truck Unloading Rack No. 23	F_R23	1.5E-07	1.4%	3.8E-09	0.2%	8.0E-08	1.4%
Tank 10007	T10007	1.4E-07	1.3%	2.7E-08	1.5%	8.4E-08	1.5%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Tank 10008	T10008	1.3E-07	1.2%	2.5E-08	1.4%	9.0E-08	1.6%
Tank 10006	T10006	1.2E-07	1.1%	2.4E-08	1.4%	7.5E-08	1.3%
Tank 25006	T25006	1.2E-07	1.1%	1.6E-08	0.9%	7.0E-08	1.2%
Tank 25005	T25005	1.1E-07	1.1%	1.2E-08	0.7%	6.7E-08	1.2%
Tank 50006 - Vents to carbon canister	T50006	1.1E-07	1.0%	8.6E-08	4.9%	4.4E-08	0.8%
Tank Farm TF-07 piping component fugitives	FUGTKFM7	9.2E-08	0.9%	1.7E-08	1.0%	6.6E-08	1.2%
Tank 25009	T25009	7.6E-08	0.7%	1.3E-08	0.7%	4.9E-08	0.8%
Fugitive Components - Tank Truck Loading Rack No. 6 (60/61)	F_R6	6.0E-08	0.6%	1.5E-09	0.1%	3.1E-08	0.5%
Fugitive Components - Tank Truck Loading Rack No. 7 (70/71)	F_R7	6.0E-08	0.6%	1.5E-09	0.1%	3.1E-08	0.5%
Wastewater Treatment - Existing WWT System	WW_EXIST	5.9E-08	0.6%	7.8E-09	0.4%	4.7E-08	0.8%
Tank Farm piping component fugitives	TKFUG	5.0E-08	0.5%	3.1E-08	1.7%	2.9E-08	0.5%
Fugitive Components - Tank Truck Loading Rack No. 19	F_R19	4.8E-08	0.4%	1.2E-09	0.1%	2.5E-08	0.4%
Fugitive Components - LPG Tank Truck Loading/Unloading Rack No. 22	F_LPG	4.7E-08	0.4%	8.3E-09	0.5%	3.3E-08	0.6%
Fugitive Components - Tank Truck Loading Rack No. 8 (80/81)	F_R8	4.5E-08	0.4%	1.1E-09	0.1%	2.3E-08	0.4%
Tank 10005	T10005	3.8E-08	0.4%	8.0E-09	0.4%	2.5E-08	0.4%
Tank Farm TF-04 piping component fugitives	FUGTKFM4	3.6E-08	0.3%	7.6E-09	0.4%	2.3E-08	0.4%
Fugitive Components - Tank Truck Unloading Rack No. 12	F_R12	3.4E-08	0.3%	8.4E-10	0.0%	1.8E-08	0.3%
Tank 25002	T25002	3.0E-08	0.3%	4.2E-09	0.2%	2.2E-08	0.4%
Tank 25001	T25001	2.8E-08	0.3%	3.8E-09	0.2%	2.0E-08	0.4%
Heaters 501 and 502 (common stack)	H501_502	2.7E-08	0.3%	1.1E-09	0.1%	2.4E-08	0.4%
Tank 25003	T25003	2.7E-08	0.3%	3.9E-09	0.2%	2.0E-08	0.3%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Heater H-350 (vents to SCR common stack to H-351)	H350	2.5E-08	0.2%	8.8E-10	0.0%	2.1E-08	0.4%
Heater H-351 (vents to SCR common stack to H-350)	H351	2.5E-08	0.2%	8.8E-10	0.0%	2.1E-08	0.4%
Tank 25004	T25004	2.4E-08	0.2%	3.5E-09	0.2%	1.8E-08	0.3%
Boiler No. 9	B9	2.3E-08	0.2%	8.3E-10	0.0%	1.8E-08	0.3%
Heater 102	H102	2.2E-08	0.2%	8.6E-10	0.0%	1.9E-08	0.3%
Tank 2014	T2014	1.7E-08	0.2%	3.1E-09	0.2%	1.3E-08	0.2%
Heater 907 and 908 (common stack)	H907_908	1.6E-08	0.2%	6.5E-10	0.0%	1.4E-08	0.2%
Boiler No. 7	B7	1.6E-08	0.1%	5.6E-10	0.0%	1.2E-08	0.2%
Boiler No. 8	B8	1.6E-08	0.1%	5.6E-10	0.0%	1.2E-08	0.2%
Tank 518	T518	1.4E-08	0.1%	5.2E-09	0.3%	7.0E-09	0.1%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility, SP 3	F_SP3	1.3E-08	0.1%	1.7E-09	0.1%	1.0E-08	0.2%
Heater 101	H101	1.2E-08	0.1%	5.0E-10	0.0%	1.1E-08	0.2%
Wastewater Treatment - New Pretreat WWT System	WW_NEW	1.2E-08	0.1%	2.1E-09	0.1%	8.5E-09	0.1%
Tank 6002	T6002	9.7E-09	0.1%	1.5E-09	0.1%	7.8E-09	0.1%
Tank 6001	T6001	9.3E-09	0.1%	1.4E-09	0.1%	7.5E-09	0.1%
Heaters 401 and 402 (common stack)	H401_402	8.1E-09	0.1%	3.1E-10	0.0%	6.7E-09	0.1%
Fugitive Components - Pipeline Flushing/Receiving Unit	F_PIPEFL	7.1E-09	0.1%	3.6E-09	0.2%	3.2E-09	0.1%
Tank 12502	T12502	5.4E-09	0.1%	9.6E-10	0.1%	3.7E-09	0.1%
Tank 35001	T35001	5.1E-09	0.0%	8.1E-10	0.0%	3.3E-09	0.1%
Tank 20004	T20004	5.1E-09	0.0%	7.2E-10	0.0%	3.1E-09	0.1%
Tank 20003	T20003	4.5E-09	0.0%	7.2E-10	0.0%	2.8E-09	0.0%
Tank 12501	T12501	4.4E-09	0.0%	8.0E-10	0.0%	3.2E-09	0.1%
Tank 20005	T20005	4.0E-09	0.0%	5.7E-10	0.0%	2.5E-09	0.0%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Fugitive Components - New Vapor Recovery System (Spur 3 and Rack 18)	F_VR_NEW	3.6E-09	0.0%	4.9E-10	0.0%	2.8E-09	0.0%
Fugitive Components - Tank Truck Loading Rack No. 18	F_R18	3.5E-09	0.0%	6.4E-10	0.0%	2.5E-09	0.0%
Tank 50004	T50004	2.4E-09	0.0%	3.5E-10	0.0%	1.8E-09	0.0%
Tank 3001	T3001	2.1E-09	0.0%	3.4E-10	0.0%	1.6E-09	0.0%
Unit A amine acid gas, sour water stripper gas, and waste water stripper gas vent streams (vents to H-401)	PVENT401	2.1E-09	0.0%	2.4E-10	0.0%	1.7E-09	0.0%
Tank 50008	T50008	1.5E-09	0.0%	3.5E-10	0.0%	1.0E-09	0.0%
Fugitive Components - Tank Truck Unloading Rack No. 1 (1/1A)	F_R1_1A	1.4E-09	0.0%	4.0E-10	0.0%	8.7E-10	0.0%
Load Rack 20 stack emissions (vents to H-907)	R20_ST	1.4E-09	0.0%	1.7E-10	0.0%	1.2E-09	0.0%
Load Rack 21 stack emissions (vents to H-907)	R21_ST	1.4E-09	0.0%	1.7E-10	0.0%	1.2E-09	0.0%
Load Rack 19 stack emissions (vents to H-907)	R19_ST	1.3E-09	0.0%	1.5E-10	0.0%	1.1E-09	0.0%
Load Rack 80 & 81 stack emissions (vents to H-907)	R8081_ST	1.3E-09	0.0%	1.5E-10	0.0%	1.1E-09	0.0%
Fugitive Components - Wastewater Separation Fac (Hydroprocessing Area)	F_WW_HYD	1.2E-09	0.0%	1.6E-10	0.0%	9.5E-10	0.0%
Fugitive Components - Wastewater Separation Fac (Crude Unit Area)	F_WW_CR	1.1E-09	0.0%	2.0E-10	0.0%	8.3E-10	0.0%
Unit B amine acid gas, sour water stripper gas, and sour water stripper plus degasser vent streams (vents to H-907)	PVENT907	9.6E-10	0.0%	1.1E-10	0.0%	8.3E-10	0.0%
Tank 25008	T25008	7.1E-10	0.0%	4.5E-11	0.0%	4.4E-10	0.0%
Tank Farm TF-09 piping component fugitives	FUGTKFM9	5.0E-10	0.0%	6.7E-11	0.0%	4.0E-10	0.0%
Railroad Spur 3 load rack stack emissions (vents to H-907)	SP3_ST	3.9E-10	0.0%	4.7E-11	0.0%	3.4E-10	0.0%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Load Rack 18 stack emissions (vents to H-907)	R18_ST	1.7E-10	0.0%	2.1E-11	0.0%	1.5E-10	0.0%
Fugitive Components - Lift Station Sump	F_LSS	1.5E-10	0.0%	2.3E-11	0.0%	1.2E-10	0.0%
Fugitive Components - Pretreat Unit Wastewater Treatment	F_PRE_WW	1.2E-10	0.0%	1.9E-11	0.0%	8.7E-11	0.0%
New flare	NEWFLARE	9.7E-11	0.0%	2.8E-12	0.0%	9.9E-11	0.0%
Tank 10009	T10009	9.1E-11	0.0%	1.2E-11	0.0%	7.5E-11	0.0%
Tank 10001	T10001	8.5E-11	0.0%	1.1E-11	0.0%	7.1E-11	0.0%
Load Rack 60 & 61 stack emissions (vents to H-907)	R6061_ST	6.4E-11	0.0%	7.6E-12	0.0%	5.5E-11	0.0%
Load Rack 70 & 71 stack emissions (vents to H-907)	R7071_ST	6.4E-11	0.0%	7.6E-12	0.0%	5.5E-11	0.0%
Tank 242	T242	1.0E-11	0.0%	1.4E-12	0.0%	8.3E-12	0.0%
Tank 1000 piping component fugitives	FUGT1000	4.1E-13	0.0%	5.4E-14	0.0%	3.3E-13	0.0%
Fugitive Components - Spent Caustic Loading Rack	F_SPENT	6.8E-14	0.0%	9.9E-15	0.0%	5.3E-14	0.0%
Spent Caustic Loading Rack (vents to H-401)	SP_CAUST	2.6E-14	0.0%	3.0E-15	0.0%	2.1E-14	0.0%
Tank 1000 - Vents to H-401	T1000	1.2E-14	0.0%	1.4E-15	0.0%	1.0E-14	0.0%
Cooling tower Y-500/501	CT500	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Cooling tower Y-800/801/802	CT800	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)	F_AB_HTR	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit A Amine/Fuel Gas Treating Unit	F_AMFGT	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit A Amine Regeneration Unit	F_AMREG	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit B Amine	F_BAMINE	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit B H2S Recovery Unit	F_BH2S	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Fugitive Components - Boilers	F_BLRS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Caustic Storage and Scrubbing	F_CAUSTC	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - DMDS Unloading Rack	F_DMDS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Fuel Gas System	F_FGSYS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Flare Vapor Recovery System	F_FL_VRS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Refinery Flare System	F_FLARES	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Hydrogen Generation Unit	F_H2GEN	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Hydrogen Reformer Heater	F_H2REF	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Incineration System	F_INCIN	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Naphtha Stabilization and Propane Recovery	F_NAPH	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - New Flare System	F_NEW_FL	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - New Sour Water Stripper	F_NEWSWS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - New Flare Vapor Recovery System	F_NWFVRS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility	F_ORG	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Pretreat Unit	F_PRE	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Propane Recovery	F_PROPNE	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Renewable Fuels Unit B	F_RF_B	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%

Table H-2. Post-Project Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Fugitive Components - Renewable Fuels First Stage	F_RF1ST	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Renewable Fuels Second Stage	F_RF2ND	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - SCR - Aqueous NH3 Transfer and Storage	F_SCR	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - SOx Scrubbing System	F_SCRUB	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Pretreatment clay oil recovery system	F_SPCLAY	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Soil Vapor Extraction Area 1	F_SVE1	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Soil Vapor Extraction System Area 234	F_SVE234	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Soil Vapor Extraction System Area 5	F_SVE5	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Units A & B Sour Water Stripper Unit	F_SWS	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Fugitive Components - Unit A SOx Control (P7S1-3) located at Sulfur Recovery Unit	F_UA_SOX	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
H2 Plant Venting (same stack as H-151)	H2VENT	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Pretreat Unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Tank 20001	T20001	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Tank 20002	T20002	0.0E+00	0.0%	0.0E+00	0.0%	0.0E+00	0.0%
Total		**1.1E-05**	**100.0%**	**1.8E-06**	**100.0%**	**5.7E-06**	**100.0%**

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
HDS Fugitives	10	3.4E-03	25.8%
Crude Unit Fugitives 2	9	1.2E-03	9.0%
Crude Unit Fugitives 1	8	8.5E-04	6.4%
Rail Loading	50	8.4E-04	6.4%
Naphtha Splitter Fugitives	52	7.7E-04	5.8%
Jet Unit Fugitives	11	6.5E-04	5.0%
T80002	136	4.5E-04	3.5%
T125002	79	3.0E-04	2.3%
T80003	137	2.8E-04	2.1%
T125001	78	2.5E-04	1.9%
T50003	113	2.4E-04	1.8%
T50004	114	2.3E-04	1.7%
Heaters 303, 304, 305 & 306	25	2.2E-04	1.7%
5HDSPENEX Unit	1	2.2E-04	1.6%
Ben Sat Unit Fugitives	5	2.2E-04	1.6%
Naptha Stripper Fugitives	53	2.0E-04	1.5%
Gasoline Blender Fugitives	20	1.8E-04	1.3%
LSR Chiller Unit Fugitives	51	1.6E-04	1.2%
T3001	108	1.5E-04	1.2%
T25004	101	1.5E-04	1.1%
Offsite Rail Mover	146	1.2E-04	0.9%
T10007	61	1.2E-04	0.9%
T20005	90	1.1E-04	0.9%
Asphalt Unit Fugitives	7	1.1E-04	0.8%
T25003	100	1.0E-04	0.8%
TF-09 Fugitives	19	1.0E-04	0.8%
T25001	98	9.6E-05	0.7%
T10005	59	9.4E-05	0.7%

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
Load Racks 3,4,5, & 23	48	9.4E-05	0.7%
T25007	104	8.9E-05	0.7%
T25002	99	7.6E-05	0.6%
T50001	111	7.5E-05	0.6%
TK-07 Fugitives	17	7.0E-05	0.5%
T10006	60	6.2E-05	0.5%
T25006	103	5.9E-05	0.4%
Cogen	6	5.9E-05	0.4%
T6001	131	5.6E-05	0.4%
TF-08 Fugitives	18	5.4E-05	0.4%
T6002	132	5.3E-05	0.4%
Cooling Tower 800 Group	145	5.0E-05	0.4%
TF-00-101 Fugitives	12	4.9E-05	0.4%
TF-03 Fugitives	14	4.9E-05	0.4%
Pipe Fugitives from Tanks	138	4.5E-05	0.3%
T10008	62	4.3E-05	0.3%
T25005	102	4.2E-05	0.3%
TF-04 Fugitives	15	3.1E-05	0.2%
Heater 802	36	2.8E-05	0.2%
Heater 602	29	2.7E-05	0.2%
Cooling Tower 500 Group	144	2.6E-05	0.2%
TF-05 Fugitives	16	2.5E-05	0.2%
T80001	135	2.5E-05	0.2%
TF-02 Fugitives	13	1.8E-05	0.1%
Load Racks 19,20, &21	47	1.7E-05	0.1%
Heater 907	42	1.4E-05	0.1%
Heaetr 102	22	1.4E-05	0.1%
Wastewater Treatment	139	1.1E-05	0.1%

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
Boiler 7	2	1.1E-05	0.1%
Heater 805	37	1.1E-05	0.1%
Heater 902	40	9.6E-06	0.1%
Heater 704	33	8.6E-06	0.1%
Heater 501/502	27	7.7E-06	0.1%
Heater 402	26	7.3E-06	0.1%
Heater 302	24	6.0E-06	0.0%
Heater 705	34	5.3E-06	0.0%
Heater 101	21	5.3E-06	0.0%
Heater 860	38	5.0E-06	0.0%
Heater 703	32	4.4E-06	0.0%
Heater 701	30	3.9E-06	0.0%
Heater 601	28	3.5E-06	0.0%
Heater 702	31	3.2E-06	0.0%
Boiler 8	3	2.8E-06	0.0%
Boiler 9	4	2.8E-06	0.0%
Heater 301	23	2.1E-06	0.0%
Heater 801	35	1.4E-06	0.0%
T25009	106	1.4E-06	0.0%
T20004	89	1.0E-06	0.0%
T50002	112	1.0E-06	0.0%
Heater 905	41	9.4E-07	0.0%
T12501	80	6.0E-07	0.0%
T12502	81	5.2E-07	0.0%
T5501	130	3.4E-07	0.0%
T10001	56	2.6E-07	0.0%
T10009	63	2.4E-07	0.0%
T25008	105	4.5E-08	0.0%

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
Load Racks 11, 13, 15, & 26	44	2.1E-08	0.0%
Load Rack 1,2, & 14	45	2.0E-08	0.0%
Load Racks 16, 17, & 18	46	1.6E-08	0.0%
Load Rack 6,7, 8, &12	49	1.2E-08	0.0%
Heater 901	39	0.0E+00	0.0%
LPG Load Rack 22	43	0.0E+00	0.0%
T100001	54	0.0E+00	0.0%
T100002	55	0.0E+00	0.0%
T10003	57	0.0E+00	0.0%
T10004	58	0.0E+00	0.0%
T1012	64	0.0E+00	0.0%
T1013	65	0.0E+00	0.0%
T1014	66	0.0E+00	0.0%
T1015	67	0.0E+00	0.0%
T1019	68	0.0E+00	0.0%
T1020	69	0.0E+00	0.0%
T1021	70	0.0E+00	0.0%
T1022	71	0.0E+00	0.0%
T1023	72	0.0E+00	0.0%
T1024	73	0.0E+00	0.0%
T1025	74	0.0E+00	0.0%
T1026	75	0.0E+00	0.0%
T1027	76	0.0E+00	0.0%
T1028	77	0.0E+00	0.0%
T141	82	0.0E+00	0.0%
T142	83	0.0E+00	0.0%
T150001	84	0.0E+00	0.0%
T150002	85	0.0E+00	0.0%

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
T20001	86	0.0E+00	0.0%
T20002	87	0.0E+00	0.0%
T20003	88	0.0E+00	0.0%
T2014	91	0.0E+00	0.0%
T203	92	0.0E+00	0.0%
T2044	93	0.0E+00	0.0%
T2046	94	0.0E+00	0.0%
T2047	95	0.0E+00	0.0%
T2048	96	0.0E+00	0.0%
T2049	97	0.0E+00	0.0%
T2501	107	0.0E+00	0.0%
T35001	109	0.0E+00	0.0%
T3501	110	0.0E+00	0.0%
T50005	115	0.0E+00	0.0%
T50006	116	0.0E+00	0.0%
T50007	117	0.0E+00	0.0%
T50008	118	0.0E+00	0.0%
T5001	119	0.0E+00	0.0%
T5002	120	0.0E+00	0.0%
T5003	121	0.0E+00	0.0%
T5004	122	0.0E+00	0.0%
T5005	123	0.0E+00	0.0%
T5006	124	0.0E+00	0.0%
T5007	125	0.0E+00	0.0%
T509	126	0.0E+00	0.0%
T512	127	0.0E+00	0.0%
T513	128	0.0E+00	0.0%
T514	129	0.0E+00	0.0%

Table H-3. Pre-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Total Risk	Fraction
T776	133	0.0E+00	0.0%
T777	134	0.0E+00	0.0%
Middle Loop	140	0.0E+00	0.0%
Northern Loop	141	0.0E+00	0.0%
Onsite Railcar Mover	142	0.0E+00	0.0%
Southern Loop	143	0.0E+00	0.0%
Total		**1.3E-02**	**100.0%**

Table H-4. Post-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Heater 907 and 908 (common stack)	H907_908	5.7E-02	32.2%
Fugitive Components - Unit B H2S Recovery Unit	F_BH2S	2.4E-02	13.9%
Fugitive Components - Unit B Amine	F_BAMINE	1.5E-02	8.6%
Fugitive Components - Incineration System	F_INCIN	9.3E-03	5.3%
Fugitive Components - SOx Scrubbing System	F_SCRUB	8.3E-03	4.7%
Fugitive Components - SCR - Aqueous NH3 Transfer and Storage	F_SCR	8.3E-03	4.7%
Heaters 401 and 402 (common stack)	H401_402	7.6E-03	4.3%
Fugitive Components - Units A & B Sour Water Stripper Unit	F_SWS	5.7E-03	3.2%
Fugitive Components - Unit A Amine Regeneration Unit	F_AMREG	4.7E-03	2.7%
Fugitive Components - Renewable Fuels Unit B	F_RF_B	2.9E-03	1.7%
Heater H-151 (H2 plant)	H151	2.3E-03	1.3%
Boiler No. 9	B9	2.3E-03	1.3%
Fugitive Components - Unit A Amine/Fuel Gas Treating Unit	F_AMFGT	2.1E-03	1.2%
Cooling tower Y-800/801/802	CT800	2.0E-03	1.1%
Fugitive Components - Caustic Storage and Scrubbing	F_CAUSTC	1.9E-03	1.1%
Heaters 501 and 502 (common stack)	H501_502	1.9E-03	1.1%
Fugitive Components - Renewable Fuels First Stage	F_RF1ST	1.7E-03	0.9%
Heater H-350 (vents to SCR common stack to H-351)	H350	1.6E-03	0.9%
Heater H-351 (vents to SCR common stack to H-350)	H351	1.6E-03	0.9%
Boiler No. 7	B7	1.5E-03	0.9%
Boiler No. 8	B8	1.5E-03	0.9%
Pretreat Unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	1.5E-03	0.9%
Fugitive Components - Propane Recovery	F_PROPNE	1.5E-03	0.8%
Heater 102	H102	1.5E-03	0.8%
Cooling tower Y-500/501	CT500	1.0E-03	0.6%
Union Pacific Locomotive	UPRAIL	9.6E-04	0.5%
Heater 101	H101	8.6E-04	0.5%
Fugitive Components - Renewable Fuels Second Stage	F_RF2ND	5.4E-04	0.3%

Table H-4. Post-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Tank 50003	T50003	5.3E-04	0.3%
Fugitive Components - In-Line Gasoline Blending	F_INLN	4.5E-04	0.3%
Tank 150001 - Vents to carbon canister	T150001	4.1E-04	0.2%
Tank Farm TF-03 piping component fugitives	FUGTKFM3	3.2E-04	0.2%
Fugitive Components - New Sour Water Stripper	F_NEWSWS	3.1E-04	0.2%
Fugitive Components - Naphtha Stabilization and Propane Recovery	F_NAPH	2.9E-04	0.2%
Tank 25007	T25007	2.3E-04	0.1%
Tank Farm TF-07 piping component fugitives	FUGTKFM7	2.2E-04	0.1%
Wastewater Treatment - Existing WWT System	WW_EXIST	1.8E-04	0.1%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility, SP 3	F_SP3	1.7E-04	0.1%
Tank Farm TF-02 piping component fugitives	FUGTKFM2	1.6E-04	0.1%
Tank 50006 - Vents to carbon canister	T50006	1.4E-04	0.1%
Tank 10006	T10006	1.4E-04	0.1%
Tank 10007	T10007	1.2E-04	0.1%
Tank 6001	T6001	1.2E-04	0.1%
Tank 6002	T6002	1.2E-04	0.1%
Tank 10008	T10008	1.0E-04	0.1%
Tank 50005 - Vents to carbon canister	T50005	8.6E-05	0.0%
Tank Farm TF-05 piping component fugitives	FUGTKFM5	8.6E-05	0.0%
Fugitive Components - Flare Vapor Recovery System	F_FL_VRS	6.9E-05	0.0%
Fugitive Components - Hydrogen Generation Unit	F_H2GEN	6.5E-05	0.0%
Fugitive Components - LPG Tank Truck Loading/Unloading Rack No. 22	F_LPG	5.7E-05	0.0%
Tank Farm piping component fugitives	TKFUG	5.5E-05	0.0%
Fugitive Components - Unit A SOx Control (P7S1-3) located at Sulfur Recovery Unit	F_UA_SOX	5.4E-05	0.0%
Fugitive Components - Fuel Gas System	F_FGSYS	5.3E-05	0.0%
Onsite Diesel Trucks	TRUCKS	4.4E-05	0.0%
Fugitive Components - Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)	F_AB_HTR	3.7E-05	0.0%
Fugitive Components - Hydrogen Reformer Heater	F_H2REF	3.0E-05	0.0%

Table H-4. Post-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Boilers	F_BLRS	2.9E-05	0.0%
Tank Farm TF-04 piping component fugitives	FUGTKFM4	2.6E-05	0.0%
Fugitive Components - Refinery Flare System	F_FLARES	2.4E-05	0.0%
Fugitive Components - Wastewater Separation Fac (Hydroprocessing Area)	F_WW_HYD	2.4E-05	0.0%
Fugitive Components - Tank Truck Loading Rack No. 20	F_R20	2.4E-05	0.0%
Fugitive Components - New Flare Vapor Recovery System	F_NWFVRS	2.2E-05	0.0%
Fugitive Components - Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21	F_R21	1.7E-05	0.0%
Fugitive Components - New Vapor Recovery System (Spur 3 and Rack 18)	F_VR_NEW	1.6E-05	0.0%
Tank 2014	T2014	1.4E-05	0.0%
Fugitive Components - Tank Truck Loading Rack No. 18	F_R18	1.4E-05	0.0%
Tank 25004	T25004	1.3E-05	0.0%
Fugitive Components - New Flare System	F_NEW_FL	1.2E-05	0.0%
Tank 25003	T25003	1.2E-05	0.0%
Tank 25001	T25001	1.1E-05	0.0%
Tank 25002	T25002	1.0E-05	0.0%
Wastewater Treatment - New Pretreat WWT System	WW_NEW	1.0E-05	0.0%
Tank Farm TF-09 piping component fugitives	FUGTKFM9	8.5E-06	0.0%
Tank 50002	T50002	7.9E-06	0.0%
Tank 50001	T50001	7.3E-06	0.0%
Tank 518	T518	6.9E-06	0.0%
Tank 25009	T25009	6.7E-06	0.0%
Fugitive Components - Wastewater Separation Fac (Crude Unit Area)	F_WW_CR	6.7E-06	0.0%
Tank 50004	T50004	6.5E-06	0.0%
Tank 3001	T3001	6.3E-06	0.0%
Tank 25006	T25006	6.3E-06	0.0%
Tank 10005	T10005	6.0E-06	0.0%
H2 Plant Venting (same stack as H-151)	H2VENT	5.5E-06	0.0%
Tank 25005	T25005	5.5E-06	0.0%

Table H-4. Post-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Tank Truck Unloading Rack No. 2	F_R2	4.9E-06	0.0%
Tank 12501	T12501	3.8E-06	0.0%
Fugitive Components - Gasoline Blendstock Tank Truck Unloading Rack No. 23	F_R23	3.5E-06	0.0%
Tank 50008	T50008	3.3E-06	0.0%
Tank 12502	T12502	3.2E-06	0.0%
Tank 35001	T35001	3.1E-06	0.0%
Fugitive Components - Soil Vapor Extraction Area 1	F_SVE1	2.7E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 6 (60/61)	F_R6	2.7E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 7 (70/71)	F_R7	2.7E-06	0.0%
Tank 20003	T20003	2.2E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 19	F_R19	2.1E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 8 (80/81)	F_R8	2.0E-06	0.0%
Tank 20004	T20004	1.9E-06	0.0%
Tank 20005	T20005	1.8E-06	0.0%
Fugitive Components - Lift Station Sump	F_LSS	1.8E-06	0.0%
Fugitive Components - Pipeline Flushing/Receiving Unit	F_PIPEFL	1.8E-06	0.0%
Fugitive Components - Tank Truck Unloading Rack No. 12	F_R12	1.7E-06	0.0%
Fugitive Components - Pretreat Unit Wastewater Treatment	F_PRE_WW	1.6E-06	0.0%
Fugitive Components - Tank Truck Unloading Rack No. 1 (1/1A)	F_R1_1A	1.4E-06	0.0%
Tank 10001	T10001	1.3E-06	0.0%
Tank 10009	T10009	1.2E-06	0.0%
Fugitive Components - Soil Vapor Extraction System Area 5	F_SVE5	8.9E-07	0.0%
Fugitive Components - Soil Vapor Extraction System Area 234	F_SVE234	7.1E-07	0.0%
New flare	NEWFLARE	5.3E-07	0.0%
Load Rack 60 & 61 stack emissions (vents to H-907)	R6061_ST	3.5E-07	0.0%
Load Rack 70 & 71 stack emissions (vents to H-907)	R7071_ST	3.5E-07	0.0%
Fugitive Components - Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21	F_VR	2.3E-07	0.0%

Table H-4. Post-Project Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Unit A amine acid gas, sour water stripper gas, and waste water stripper gas vent streams (vents to H-401)	PVENT401	1.8E-07	0.0%
Tank 25008	T25008	1.5E-07	0.0%
Load Rack 18 stack emissions (vents to H-907)	R18_ST	1.2E-07	0.0%
Load Rack 20 stack emissions (vents to H-907)	R20_ST	9.8E-08	0.0%
Load Rack 21 stack emissions (vents to H-907)	R21_ST	9.8E-08	0.0%
Load Rack 19 stack emissions (vents to H-907)	R19_ST	8.8E-08	0.0%
Load Rack 80 & 81 stack emissions (vents to H-907)	R8081_ST	8.8E-08	0.0%
Railroad Spur 3 load rack stack emissions (vents to H-907)	SP3_ST	2.7E-08	0.0%
Tank 242	T242	4.3E-09	0.0%
Tank 1000 piping component fugitives	FUGT1000	2.6E-09	0.0%
Fugitive Components - Spent Caustic Loading Rack	F_SPENT	1.8E-10	0.0%
Spent Caustic Loading Rack (vents to H-401)	SP_CAUST	1.1E-12	0.0%
Tank 1000 - Vents to H-401	T1000	5.1E-13	0.0%
Fugitive Components - DMDS Unloading Rack	F_DMDS	0.0E+00	0.0%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility	F_ORG	0.0E+00	0.0%
Fugitive Components - Pretreat Unit	F_PRE	0.0E+00	0.0%
Fugitive Components - Pretreatment clay oil recovery system	F_SPCLAY	0.0E+00	0.0%
Unit B amine acid gas, sour water stripper gas, and sour water stripper plus degasser vent streams (vents to H-907)	PVENT907	0.0E+00	0.0%
Tank 20001	T20001	0.0E+00	0.0%
Tank 20002	T20002	0.0E+00	0.0%
Total		**1.8E-01**	**100.0%**

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
HDS Fugitives	10	6.7E-03	19.6%
Crude Unit Fugitives 2	9	2.1E-03	6.1%
T80002	136	1.9E-03	5.7%
T125002	79	1.5E-03	4.4%
Crude Unit Fugitives 1	8	1.5E-03	4.3%
T80003	137	1.4E-03	4.1%
Naphtha Splitter Fugitives	52	1.4E-03	4.0%
Jet Unit Fugitives	11	1.3E-03	3.8%
T125001	78	1.3E-03	3.7%
T50003	113	1.1E-03	3.1%
Rail Loading	50	8.7E-04	2.5%
T50004	114	7.1E-04	2.1%
5HDSPENEX Unit	1	6.4E-04	1.9%
Ben Sat Unit Fugitives	5	6.4E-04	1.9%
Gasoline Blender Fugitives	20	6.0E-04	1.7%
T20005	90	5.8E-04	1.7%
Asphalt Unit Fugitives	7	5.6E-04	1.6%
T25004	101	5.5E-04	1.6%
T10007	61	5.4E-04	1.6%
LSR Chiller Unit Fugitives	51	5.2E-04	1.5%
Naptha Stripper Fugitives	53	5.2E-04	1.5%
T10005	59	4.2E-04	1.2%
T25007	104	4.1E-04	1.2%
T25003	100	4.0E-04	1.2%
Load Racks 3,4,5, & 23	48	3.8E-04	1.1%
Heaters 303, 304, 305 & 306	25	3.8E-04	1.1%
T50001	111	3.7E-04	1.1%
TF-08 Fugitives	18	3.4E-04	1.0%

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
T25001	98	3.2E-04	0.9%
T25006	103	3.0E-04	0.9%
T25002	99	2.9E-04	0.9%
T10006	60	2.7E-04	0.8%
TF-00-101 Fugitives	12	2.7E-04	0.8%
T3001	108	2.7E-04	0.8%
T25005	102	2.2E-04	0.6%
Cogen	6	2.0E-04	0.6%
TF-03 Fugitives	14	2.0E-04	0.6%
TF-04 Fugitives	15	1.9E-04	0.6%
T10008	62	1.9E-04	0.5%
TK-07 Fugitives	17	1.7E-04	0.5%
TF-05 Fugitives	16	1.6E-04	0.5%
TF-09 Fugitives	19	1.6E-04	0.5%
Heaetr 102	22	1.3E-04	0.4%
Heater 802	36	1.2E-04	0.3%
T6001	131	1.1E-04	0.3%
Heater 602	29	1.1E-04	0.3%
T6002	132	1.0E-04	0.3%
Pipe Fugitives from Tanks	138	1.0E-04	0.3%
TF-02 Fugitives	13	9.9E-05	0.3%
Load Racks 19,20, &21	47	8.5E-05	0.2%
T80001	135	8.2E-05	0.2%
Heater 907	42	7.0E-05	0.2%
Cooling Tower 500 Group	144	4.3E-05	0.1%
Heater 501/502	27	4.2E-05	0.1%
Heater 101	21	4.1E-05	0.1%
Heater 805	37	3.6E-05	0.1%

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Heater 302	24	3.1E-05	0.1%
Boiler 8	3	3.0E-05	0.1%
Heater 902	40	3.0E-05	0.1%
Cooling Tower 800 Group	145	2.7E-05	0.1%
Heater 601	28	2.7E-05	0.1%
Heater 704	33	2.1E-05	0.1%
Heater 402	26	1.8E-05	0.1%
Wastewater Treatment	139	1.8E-05	0.1%
Heater 701	30	1.6E-05	0.0%
Heater 702	31	1.3E-05	0.0%
Heater 301	23	1.3E-05	0.0%
Heater 705	34	1.3E-05	0.0%
Heater 860	38	1.2E-05	0.0%
T25009	106	7.0E-06	0.0%
Heater 703	32	6.8E-06	0.0%
T20004	89	5.1E-06	0.0%
Heater 801	35	5.1E-06	0.0%
Heater 905	41	5.0E-06	0.0%
T50002	112	5.0E-06	0.0%
T12501	80	3.0E-06	0.0%
T12502	81	2.6E-06	0.0%
T5501	130	6.7E-07	0.0%
T10001	56	4.2E-07	0.0%
T10009	63	3.9E-07	0.0%
T25008	105	2.3E-07	0.0%
Load Racks 11, 13, 15, & 26	44	1.2E-07	0.0%
Load Rack 1,2, & 14	45	8.2E-08	0.0%
Load Rack 6,7, 8, &12	49	6.1E-08	0.0%

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Load Racks 16, 17, & 18	46	2.3E-08	0.0%
Boiler 7	2	0.0E+00	0.0%
Boiler 9	4	0.0E+00	0.0%
Heater 901	39	0.0E+00	0.0%
LPG Load Rack 22	43	0.0E+00	0.0%
T100001	54	0.0E+00	0.0%
T100002	55	0.0E+00	0.0%
T10003	57	0.0E+00	0.0%
T10004	58	0.0E+00	0.0%
T1012	64	0.0E+00	0.0%
T1013	65	0.0E+00	0.0%
T1014	66	0.0E+00	0.0%
T1015	67	0.0E+00	0.0%
T1019	68	0.0E+00	0.0%
T1020	69	0.0E+00	0.0%
T1021	70	0.0E+00	0.0%
T1022	71	0.0E+00	0.0%
T1023	72	0.0E+00	0.0%
T1024	73	0.0E+00	0.0%
T1025	74	0.0E+00	0.0%
T1026	75	0.0E+00	0.0%
T1027	76	0.0E+00	0.0%
T1028	77	0.0E+00	0.0%
T141	82	0.0E+00	0.0%
T142	83	0.0E+00	0.0%
T150001	84	0.0E+00	0.0%
T150002	85	0.0E+00	0.0%
T20001	86	0.0E+00	0.0%

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
T20002	87	0.0E+00	0.0%
T20003	88	0.0E+00	0.0%
T2014	91	0.0E+00	0.0%
T203	92	0.0E+00	0.0%
T2044	93	0.0E+00	0.0%
T2046	94	0.0E+00	0.0%
T2047	95	0.0E+00	0.0%
T2048	96	0.0E+00	0.0%
T2049	97	0.0E+00	0.0%
T2501	107	0.0E+00	0.0%
T35001	109	0.0E+00	0.0%
T3501	110	0.0E+00	0.0%
T50005	115	0.0E+00	0.0%
T50006	116	0.0E+00	0.0%
T50007	117	0.0E+00	0.0%
T50008	118	0.0E+00	0.0%
T5001	119	0.0E+00	0.0%
T5002	120	0.0E+00	0.0%
T5003	121	0.0E+00	0.0%
T5004	122	0.0E+00	0.0%
T5005	123	0.0E+00	0.0%
T5006	124	0.0E+00	0.0%
T5007	125	0.0E+00	0.0%
T509	126	0.0E+00	0.0%
T512	127	0.0E+00	0.0%
T513	128	0.0E+00	0.0%
T514	129	0.0E+00	0.0%
T776	133	0.0E+00	0.0%

Table H-5. Pre-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
T777	134	0.0E+00	0.0%
Middle Loop	140	0.0E+00	0.0%
Northern Loop	141	0.0E+00	0.0%
Onsite Railcar Mover	142	0.0E+00	0.0%
Southern Loop	143	0.0E+00	0.0%
Offsite Rail Mover	146	0.0E+00	0.0%
Total		**3.4E-02**	**100.0%**

Table H-6. Post-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Unit B H2S Recovery Unit	F_BH2S	2.6E-01	27.9%
Fugitive Components - Unit B Amine	F_BAMINE	2.4E-01	26.2%
Fugitive Components - Incineration System	F_INCIN	1.3E-01	14.3%
Fugitive Components - SOx Scrubbing System	F_SCRUB	1.1E-01	12.1%
Fugitive Components - Units A & B Sour Water Stripper Unit	F_SWS	6.8E-02	7.3%
Fugitive Components - Unit A Amine Regeneration Unit	F_AMREG	2.3E-02	2.4%
Fugitive Components - Propane Recovery	F_PROPNE	1.4E-02	1.5%
Fugitive Components - Renewable Fuels Unit B	F_RF_B	1.2E-02	1.3%
Fugitive Components - Caustic Storage and Scrubbing	F_CAUSTC	9.2E-03	1.0%
Fugitive Components - Unit A Amine/Fuel Gas Treating Unit	F_AMFGT	8.0E-03	0.9%
Fugitive Components - Renewable Fuels First Stage	F_RF1ST	7.0E-03	0.8%
Tank 150001 - Vents to carbon canister	T150001	6.3E-03	0.7%
Tank 50003	T50003	5.0E-03	0.5%
Cooling tower Y-500/501	CT500	3.4E-03	0.4%
Fugitive Components - Renewable Fuels Second Stage	F_RF2ND	3.3E-03	0.4%
Fugitive Components - New Sour Water Stripper	F_NEWSWS	2.3E-03	0.2%
Cooling tower Y-800/801/802	CT800	2.2E-03	0.2%
Tank 50006 - Vents to carbon canister	T50006	2.2E-03	0.2%
Tank 25007	T25007	2.2E-03	0.2%
Tank 50005 - Vents to carbon canister	T50005	2.0E-03	0.2%
Fugitive Components - Naphtha Stabilization and Propane Recovery	F_NAPH	1.9E-03	0.2%
Tank 10006	T10006	1.3E-03	0.1%
Tank 10007	T10007	1.2E-03	0.1%
Tank 10008	T10008	8.9E-04	0.1%
Wastewater Treatment - Existing WWT System	WW_EXIST	6.8E-04	0.1%
Fugitive Components - Hydrogen Generation Unit	F_H2GEN	5.5E-04	0.1%
Tank 6001	T6001	5.1E-04	0.1%
Tank 6002	T6002	4.7E-04	0.1%

Table H-6. Post-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Hydrogen Reformer Heater	F_H2REF	3.9E-04	0.0%
Fugitive Components - In-Line Gasoline Blending	F_INLN	3.1E-04	0.0%
H2 Plant Venting (same stack as H-151)	H2VENT	2.8E-04	0.0%
Fugitive Components - Unit A SOx Control (P7S1-3) located at Sulfur Recovery Unit	F_UA_SOX	2.7E-04	0.0%
Tank Farm TF-03 piping component fugitives	FUGTKFM3	2.5E-04	0.0%
Fugitive Components - Flare Vapor Recovery System	F_FL_VRS	2.2E-04	0.0%
Fugitive Components - New Vapor Recovery System (Spur 3 and Rack 18)	F_VR_NEW	2.1E-04	0.0%
Fugitive Components - New Flare Vapor Recovery System	F_NWFVRS	2.1E-04	0.0%
Fugitive Components - Unit A and Unit B Heaters (101, 102, 350, 351, 501/502)	F_AB_HTR	2.0E-04	0.0%
Tank Farm TF-02 piping component fugitives	FUGTKFM2	1.6E-04	0.0%
Fugitive Components - Fuel Gas System	F_FGSYS	1.4E-04	0.0%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility, SP 3	F_SP3	1.3E-04	0.0%
Fugitive Components - New Flare System	F_NEW_FL	1.2E-04	0.0%
Wastewater Treatment - New Pretreat WWT System	WW_NEW	8.4E-05	0.0%
Tank Farm TF-07 piping component fugitives	FUGTKFM7	8.2E-05	0.0%
Fugitive Components - Refinery Flare System	F_FLARES	7.6E-05	0.0%
Tank Farm TF-05 piping component fugitives	FUGTKFM5	6.9E-05	0.0%
Fugitive Components - LPG Tank Truck Loading/Unloading Rack No. 22	F_LPG	6.4E-05	0.0%
Fugitive Components - Boilers	F_BLRS	5.6E-05	0.0%
Tank 518	T518	4.5E-05	0.0%
Fugitive Components - Tank Truck Loading Rack No. 20	F_R20	2.5E-05	0.0%
Fugitive Components - Gasoline/Diesel/Jet Fuel Tank Truck Loading Rack No. 21	F_R21	1.9E-05	0.0%
Tank Farm TF-04 piping component fugitives	FUGTKFM4	1.8E-05	0.0%
Fugitive Components - Soil Vapor Extraction Area 1	F_SVE1	1.8E-05	0.0%
Tank 50004	T50004	1.3E-05	0.0%
Tank 25004	T25004	1.3E-05	0.0%
Tank 35001	T35001	1.2E-05	0.0%
Tank 25003	T25003	1.1E-05	0.0%

Table H-6. Post-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Tank 50002	T50002	1.1E-05	0.0%
Tank 25002	T25002	1.0E-05	0.0%
Tank 50001	T50001	1.0E-05	0.0%
Tank 25001	T25001	9.7E-06	0.0%
Tank 25009	T25009	8.9E-06	0.0%
Tank 25006	T25006	8.7E-06	0.0%
Tank 2014	T2014	8.5E-06	0.0%
Tank 20003	T20003	8.5E-06	0.0%
Tank 10005	T10005	8.4E-06	0.0%
Fugitive Components - Soil Vapor Extraction System Area 234	F_SVE234	7.7E-06	0.0%
Tank Farm piping component fugitives	TKFUG	7.7E-06	0.0%
Tank 20004	T20004	7.4E-06	0.0%
Tank 25005	T25005	7.3E-06	0.0%
Tank 20005	T20005	5.4E-06	0.0%
Fugitive Components - Tank Truck Unloading Rack No. 2	F_R2	5.2E-06	0.0%
Load Rack 60 & 61 stack emissions (vents to H-907)	R6061_ST	5.0E-06	0.0%
Load Rack 70 & 71 stack emissions (vents to H-907)	R7071_ST	5.0E-06	0.0%
Tank 3001	T3001	4.4E-06	0.0%
Fugitive Components - Wastewater Separation Fac (Hydroprocessing Area)	F_WW_HYD	4.3E-06	0.0%
Fugitive Components - Gasoline Blendstock Tank Truck Unloading Rack No. 23	F_R23	3.8E-06	0.0%
Tank 50008	T50008	3.7E-06	0.0%
Tank 12501	T12501	3.1E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 18	F_R18	2.8E-06	0.0%
Unit A amine acid gas, sour water stripper gas, and waste water stripper gas vent streams (vents to H-401)	PVENT401	2.7E-06	0.0%
Tank 12502	T12502	2.6E-06	0.0%
Fugitive Components - Soil Vapor Extraction System Area 5	F_SVE5	2.6E-06	0.0%
Fugitive Components - Vapor Recovery for Loading Racks No. 6, 7, 8, 19, 20, & 21	F_VR	2.6E-06	0.0%

Table H-6. Post-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Wastewater Separation Fac (Crude Unit Area)	F_WW_CR	2.6E-06	0.0%
Tank Farm TF-09 piping component fugitives	FUGTKFM9	1.5E-06	0.0%
Fugitive Components - Tank Truck Loading Rack No. 6 (60/61)	F_R6	8.8E-07	0.0%
Fugitive Components - Tank Truck Loading Rack No. 7 (70/71)	F_R7	8.8E-07	0.0%
Load Rack 18 stack emissions (vents to H-907)	R18_ST	8.1E-07	0.0%
Heaters 501 and 502 (common stack)	H501_502	7.6E-07	0.0%
Tank 10001	T10001	7.5E-07	0.0%
Load Rack 20 stack emissions (vents to H-907)	R20_ST	7.2E-07	0.0%
Load Rack 21 stack emissions (vents to H-907)	R21_ST	7.2E-07	0.0%
Tank 10009	T10009	7.0E-07	0.0%
Fugitive Components - Tank Truck Loading Rack No. 19	F_R19	7.0E-07	0.0%
Load Rack 19 stack emissions (vents to H-907)	R19_ST	6.8E-07	0.0%
Load Rack 80 & 81 stack emissions (vents to H-907)	R8081_ST	6.8E-07	0.0%
Fugitive Components - Tank Truck Loading Rack No. 8 (80/81)	F_R8	6.5E-07	0.0%
Heater H-151 (H2 plant)	H151	6.2E-07	0.0%
Heater 102	H102	6.0E-07	0.0%
Fugitive Components - Lift Station Sump	F_LSS	6.0E-07	0.0%
Fugitive Components - Pipeline Flushing/Receiving Unit	F_PIPEFL	4.7E-07	0.0%
Tank 25008	T25008	3.7E-07	0.0%
Heater H-350 (vents to SCR common stack to H-351)	H350	3.5E-07	0.0%
Heater H-351 (vents to SCR common stack to H-350)	H351	3.5E-07	0.0%
Heater 101	H101	3.5E-07	0.0%
Boiler No. 9	B9	3.4E-07	0.0%
Fugitive Components - Pretreat Unit Wastewater Treatment	F_PRE_WW	2.6E-07	0.0%
Fugitive Components - Tank Truck Unloading Rack No. 12	F_R12	2.5E-07	0.0%
Heater 907 and 908 (common stack)	H907_908	2.3E-07	0.0%
Boiler No. 7	B7	2.3E-07	0.0%
Boiler No. 8	B8	2.3E-07	0.0%

Table H-6. Post-Project Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Fugitive Components - Tank Truck Unloading Rack No. 1 (1/1A)	F_R1_1A	2.1E-07	0.0%
Unit B amine acid gas, sour water stripper gas, and sour water stripper plus degasser vent streams (vents to H-907)	PVENT907	2.0E-07	0.0%
Railroad Spur 3 load rack stack emissions (vents to H-907)	SP3_ST	1.4E-07	0.0%
Heaters 401 and 402 (common stack)	H401_402	7.8E-08	0.0%
Tank 242	T242	4.3E-08	0.0%
Tank 1000 piping component fugitives	FUGT1000	7.0E-09	0.0%
New flare	NEWFLARE	1.2E-09	0.0%
Fugitive Components - Spent Caustic Loading Rack	F_SPENT	5.3E-10	0.0%
Spent Caustic Loading Rack (vents to H-401)	SP_CAUST	1.2E-11	0.0%
Tank 1000 - Vents to H-401	T1000	5.6E-12	0.0%
Fugitive Components - DMDS Unloading Rack	F_DMDS	0.0E+00	0.0%
Fugitive Components - Organic Tank/Rail Car Loading/Unloading Facility	F_ORG	0.0E+00	0.0%
Fugitive Components - Pretreat Unit	F_PRE	0.0E+00	0.0%
Fugitive Components - SCR - Aqueous NH3 Transfer and Storage	F_SCR	0.0E+00	0.0%
Fugitive Components - Pretreatment clay oil recovery system	F_SPCLAY	0.0E+00	0.0%
Pretreat Unit filter media transfers (PM emissions vented through baghouse)	PRE_FLTR	0.0E+00	0.0%
Tank 20001	T20001	0.0E+00	0.0%
Tank 20002	T20002	0.0E+00	0.0%
Onsite Diesel Trucks	TRUCKS	0.0E+00	0.0%
Union Pacific Locomotive	UPRAIL	0.0E+00	0.0%
Total		**9.3E-01**	**100.0%**

EXHIBIT I. LOCATION OF MAXIMUM IMPACTED RECEPTORS

Figure I-1. Location of Maximum Impacted Receptors



EXHIBIT J. CONTOUR MAPS

Figure J-1. Contours of Residential Cancer Risk, per Million Exposed

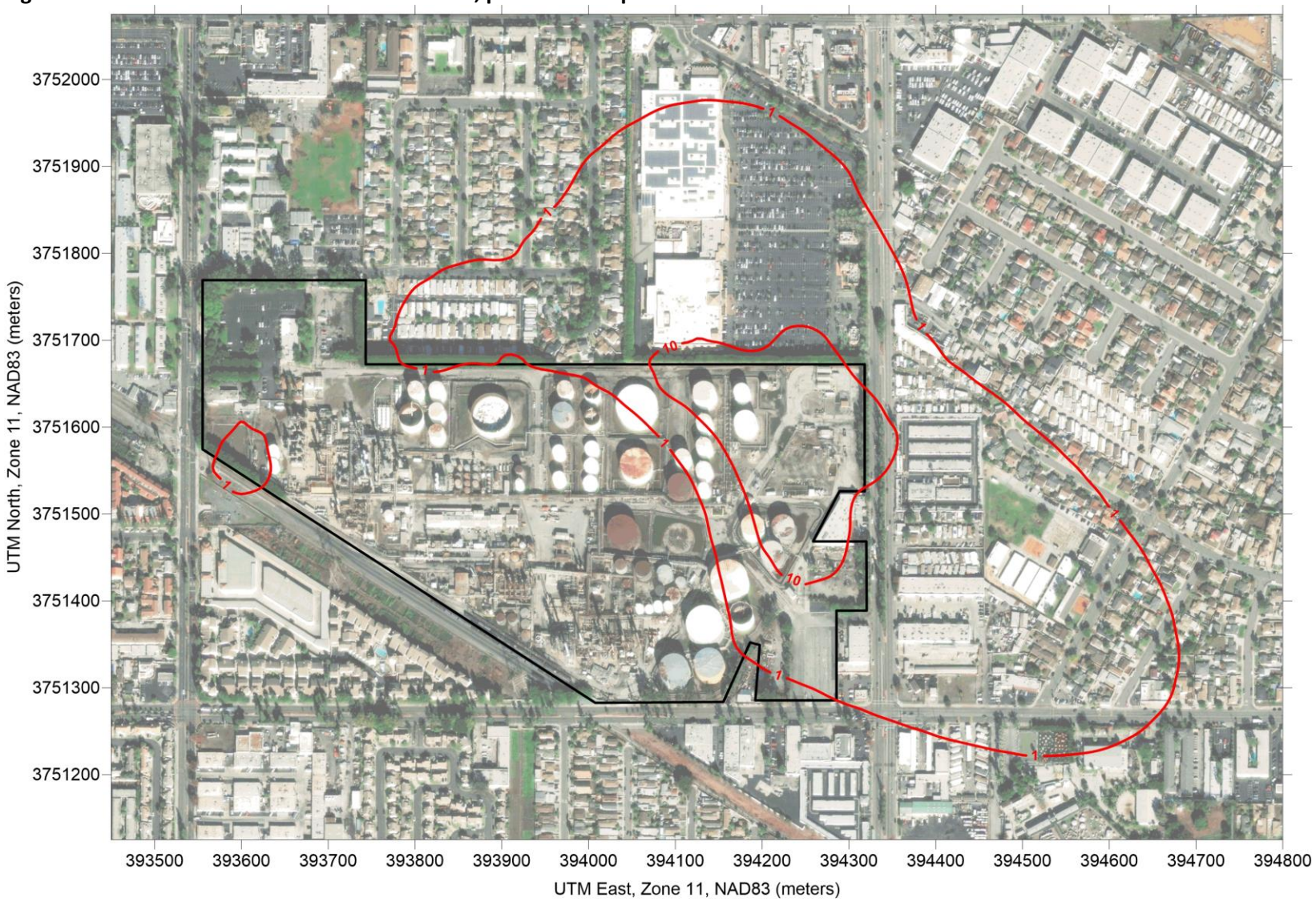


Figure J-2. Contours of Offsite Worker Cancer Risk, per Million Exposed

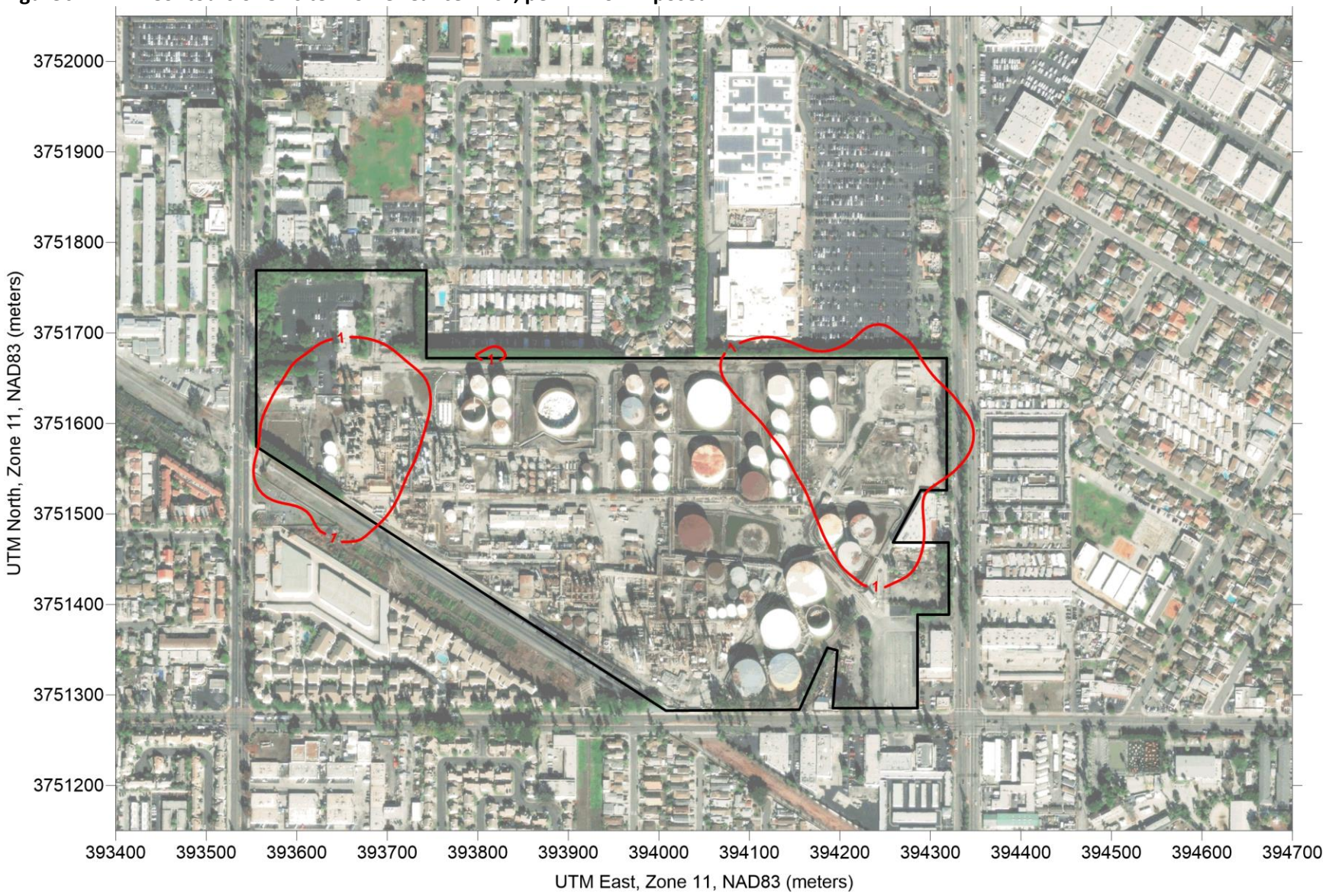


Figure J-3. Cancer Burden One per Million Cancer Risk Contour Map

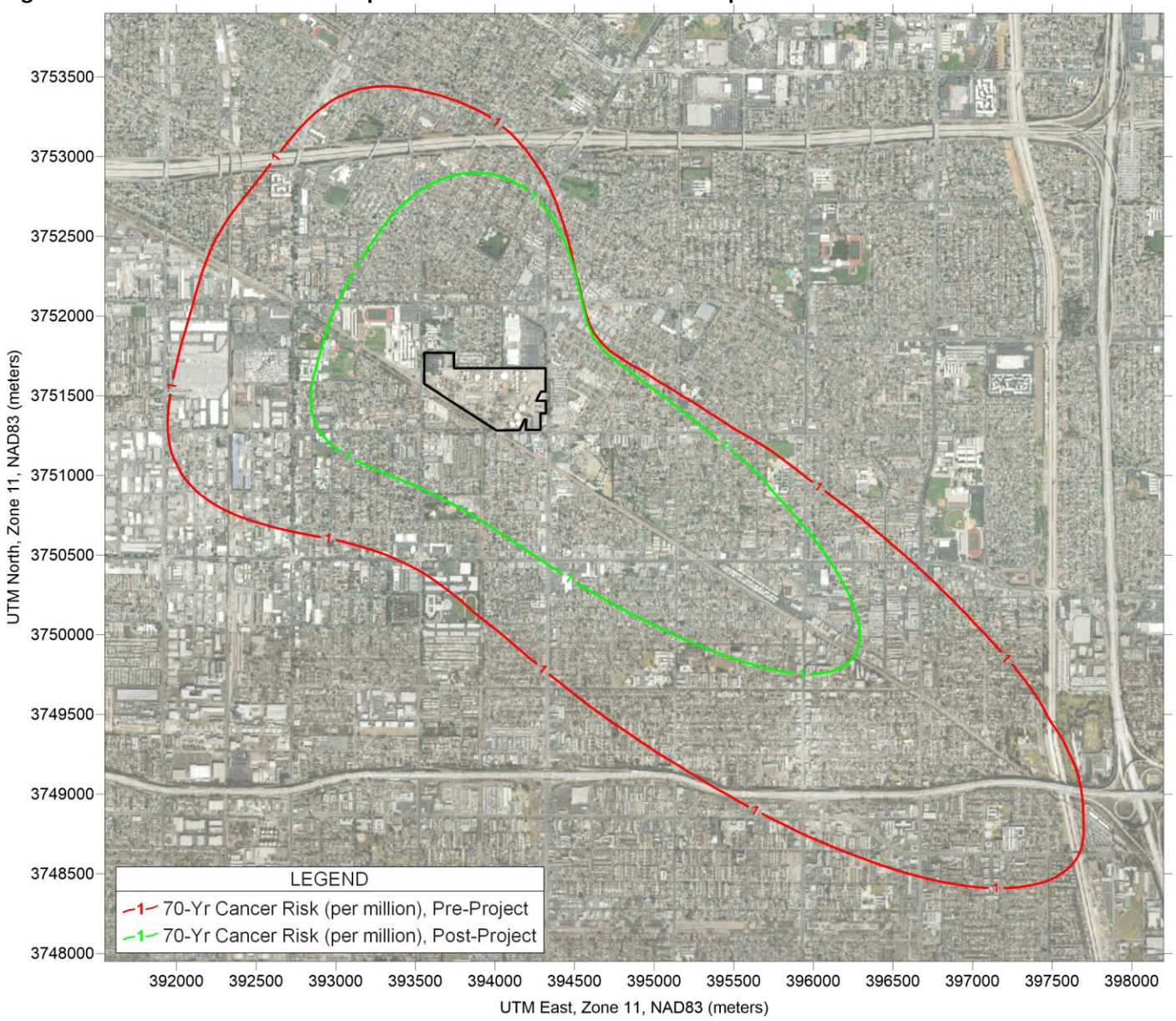


Figure J-4. Acute Risk Hazard Index Contour Map

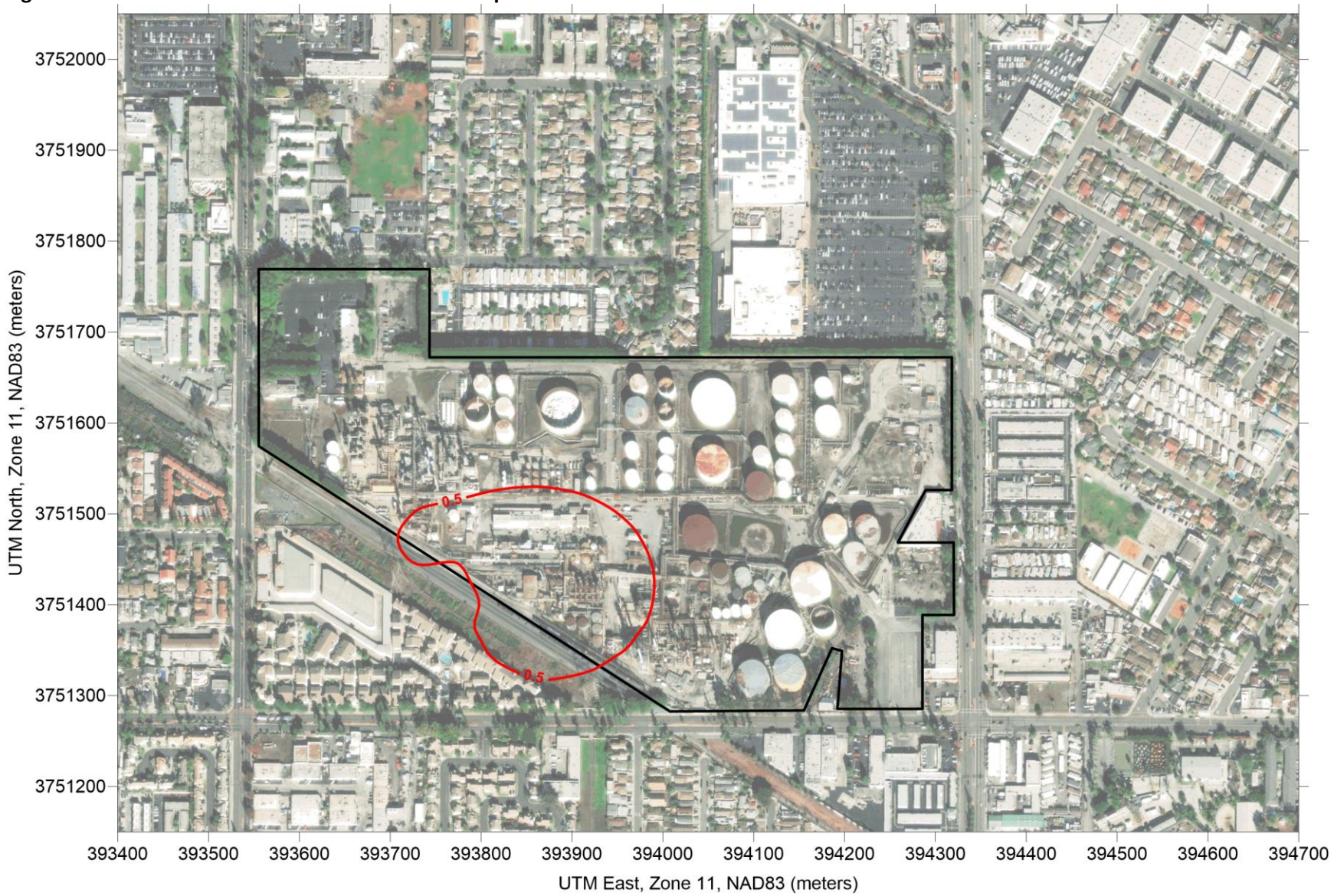


EXHIBIT K. NET RISK CALCULATIONS

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
1	393649.1	3751859	7.3E+00	5.4E-01	6.5E-03	5.1E+00	6.5E-01	5.8E-02	6.3E-02	-2.3E+00	1.2E-01	5.1E-02
2	393497.2	3751655	8.3E+00	6.5E-01	6.9E-03	4.6E+00	5.0E-01	4.4E-02	7.7E-02	-3.8E+00	-1.5E-01	3.7E-02
3	394491.8	3751457	2.9E+00	2.0E-01	4.7E-03	5.7E+00	5.0E-01	3.7E-02	5.3E-02	2.8E+00	3.0E-01	3.2E-02
4	393779.4	3750836	2.2E+00	1.6E-01	1.3E-03	9.0E-01	7.7E-02	1.8E-02	4.6E-02	-1.3E+00	-7.9E-02	1.6E-02
5	393689.8	3750768	1.6E+00	1.1E-01	1.0E-03	7.1E-01	5.9E-02	1.4E-02	3.9E-02	-9.4E-01	-5.4E-02	1.3E-02
6	393718.3	3750251	7.9E-01	5.0E-02	5.0E-04	3.5E-01	2.7E-02	7.7E-03	1.8E-02	-4.4E-01	-2.3E-02	7.2E-03
7	392934	3751056	1.6E+00	1.1E-01	1.1E-03	6.6E-01	5.4E-02	1.2E-02	2.3E-02	-9.3E-01	-5.4E-02	1.1E-02
8	393067	3751689	2.5E+00	1.7E-01	1.9E-03	1.1E+00	9.4E-02	1.5E-02	2.9E-02	-1.4E+00	-8.0E-02	1.3E-02
9	392908.2	3751851	1.8E+00	1.2E-01	1.3E-03	8.1E-01	6.6E-02	1.2E-02	2.1E-02	-1.0E+00	-5.5E-02	1.1E-02
10	393023.6	3752726	1.2E+00	7.2E-02	8.1E-04	5.6E-01	4.7E-02	1.1E-02	1.2E-02	-6.3E-01	-2.5E-02	1.0E-02
11	393957.2	3752418	1.9E+00	1.2E-01	1.6E-03	1.6E+00	1.6E-01	3.4E-02	2.2E-02	-2.3E-01	4.4E-02	3.3E-02
12	395179.8	3751878	4.9E-01	2.8E-02	3.6E-04	3.5E-01	3.1E-02	7.6E-03	1.4E-02	-1.3E-01	2.9E-03	7.3E-03
13	394355	3751627	2.4E+00	1.6E-01	4.0E-03	8.2E+00	6.9E-01	3.4E-02	7.1E-02	5.8E+00	5.3E-01	3.0E-02
14	394355	3751660	2.1E+00	1.4E-01	3.0E-03	5.1E+00	4.3E-01	3.2E-02	6.6E-02	3.0E+00	2.9E-01	2.9E-02
15	394355	3751705	1.8E+00	1.2E-01	2.3E-03	3.5E+00	3.0E-01	3.0E-02	6.2E-02	1.7E+00	1.9E-01	2.8E-02
16	394395	3751655	1.9E+00	1.2E-01	2.5E-03	3.6E+00	3.1E-01	2.8E-02	6.1E-02	1.8E+00	1.9E-01	2.5E-02
17	394355	3751500	3.8E+00	2.6E-01	7.1E-03	1.1E+01	9.1E-01	4.6E-02	7.8E-02	6.8E+00	6.5E-01	3.9E-02
18	394355	3751440	4.8E+00	3.4E-01	9.0E-03	1.1E+01	9.5E-01	5.7E-02	7.9E-02	6.2E+00	6.2E-01	4.8E-02
19	392400	3750200	4.8E-01	2.9E-02	3.0E-04	2.2E-01	1.6E-02	6.6E-03	8.7E-03	-2.7E-01	-1.3E-02	6.3E-03
20	392500	3750200	4.9E-01	2.9E-02	3.0E-04	2.2E-01	1.6E-02	6.5E-03	9.2E-03	-2.7E-01	-1.3E-02	6.2E-03
21	392600	3750200	5.0E-01	3.0E-02	3.1E-04	2.2E-01	1.6E-02	6.4E-03	9.6E-03	-2.8E-01	-1.3E-02	6.1E-03
22	392700	3750200	5.1E-01	3.0E-02	3.1E-04	2.3E-01	1.7E-02	6.3E-03	1.0E-02	-2.8E-01	-1.4E-02	6.0E-03
23	392800	3750200	5.2E-01	3.1E-02	3.2E-04	2.3E-01	1.7E-02	6.3E-03	1.1E-02	-2.9E-01	-1.4E-02	6.0E-03
24	392900	3750200	5.3E-01	3.2E-02	3.3E-04	2.4E-01	1.8E-02	6.3E-03	1.1E-02	-2.9E-01	-1.4E-02	5.9E-03
25	393000	3750200	5.4E-01	3.3E-02	3.4E-04	2.5E-01	1.8E-02	6.3E-03	1.2E-02	-3.0E-01	-1.5E-02	5.9E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
26	393100	3750200	5.6E-01	3.4E-02	3.5E-04	2.5E-01	1.9E-02	6.3E-03	1.3E-02	-3.1E-01	-1.5E-02	6.0E-03
27	393200	3750200	5.8E-01	3.5E-02	3.7E-04	2.6E-01	2.0E-02	6.4E-03	1.3E-02	-3.2E-01	-1.6E-02	6.0E-03
28	393300	3750200	6.0E-01	3.7E-02	3.8E-04	2.7E-01	2.1E-02	6.5E-03	1.4E-02	-3.3E-01	-1.6E-02	6.1E-03
29	393400	3750200	6.2E-01	3.9E-02	4.0E-04	2.8E-01	2.2E-02	6.7E-03	1.5E-02	-3.4E-01	-1.7E-02	6.3E-03
30	393500	3750200	6.5E-01	4.1E-02	4.2E-04	3.0E-01	2.3E-02	6.9E-03	1.6E-02	-3.6E-01	-1.8E-02	6.4E-03
31	393600	3750200	6.9E-01	4.3E-02	4.4E-04	3.1E-01	2.4E-02	7.1E-03	1.7E-02	-3.8E-01	-1.9E-02	6.7E-03
32	393700	3750200	7.4E-01	4.7E-02	4.7E-04	3.3E-01	2.6E-02	7.4E-03	1.7E-02	-4.1E-01	-2.1E-02	7.0E-03
33	393800	3750200	8.1E-01	5.1E-02	5.0E-04	3.5E-01	2.7E-02	7.9E-03	1.6E-02	-4.6E-01	-2.4E-02	7.4E-03
34	393900	3750200	8.9E-01	5.6E-02	5.4E-04	3.7E-01	3.0E-02	8.4E-03	1.6E-02	-5.1E-01	-2.7E-02	7.8E-03
35	394000	3750200	9.8E-01	6.3E-02	6.0E-04	4.1E-01	3.2E-02	9.0E-03	1.6E-02	-5.8E-01	-3.1E-02	8.4E-03
36	394100	3750200	1.1E+00	7.1E-02	6.6E-04	4.4E-01	3.5E-02	9.7E-03	1.5E-02	-6.6E-01	-3.5E-02	9.1E-03
37	394200	3750200	1.2E+00	7.9E-02	7.4E-04	4.9E-01	3.9E-02	1.1E-02	1.5E-02	-7.4E-01	-4.0E-02	9.9E-03
38	394300	3750200	1.4E+00	8.9E-02	8.2E-04	5.4E-01	4.3E-02	1.2E-02	1.5E-02	-8.3E-01	-4.5E-02	1.1E-02
39	394400	3750200	1.5E+00	9.9E-02	9.2E-04	5.9E-01	4.9E-02	1.3E-02	1.4E-02	-9.3E-01	-5.0E-02	1.2E-02
40	394500	3750200	1.7E+00	1.1E-01	1.0E-03	6.6E-01	5.5E-02	1.4E-02	1.5E-02	-1.0E+00	-5.4E-02	1.3E-02
41	394600	3750200	1.8E+00	1.2E-01	1.1E-03	7.3E-01	6.2E-02	1.6E-02	1.4E-02	-1.1E+00	-5.7E-02	1.5E-02
42	394700	3750200	2.0E+00	1.3E-01	1.2E-03	8.0E-01	6.9E-02	1.8E-02	1.3E-02	-1.2E+00	-5.9E-02	1.6E-02
43	394800	3750200	2.1E+00	1.4E-01	1.3E-03	8.8E-01	7.6E-02	2.0E-02	1.3E-02	-1.2E+00	-6.0E-02	1.8E-02
44	394900	3750200	2.2E+00	1.4E-01	1.4E-03	9.5E-01	8.3E-02	2.2E-02	1.2E-02	-1.3E+00	-5.8E-02	2.1E-02
45	395000	3750200	2.3E+00	1.5E-01	1.5E-03	1.0E+00	9.0E-02	2.5E-02	1.2E-02	-1.3E+00	-5.6E-02	2.3E-02
46	395100	3750200	2.3E+00	1.5E-01	1.6E-03	1.1E+00	9.5E-02	2.7E-02	1.1E-02	-1.3E+00	-5.2E-02	2.5E-02
47	395200	3750200	2.3E+00	1.5E-01	1.6E-03	1.1E+00	9.9E-02	2.9E-02	9.7E-03	-1.2E+00	-4.7E-02	2.7E-02
48	395300	3750200	2.3E+00	1.4E-01	1.6E-03	1.1E+00	1.0E-01	3.0E-02	9.2E-03	-1.2E+00	-4.2E-02	2.9E-02
49	395400	3750200	2.3E+00	1.4E-01	1.6E-03	1.2E+00	1.0E-01	3.1E-02	9.1E-03	-1.1E+00	-3.6E-02	3.0E-02
50	392400	3750300	5.3E-01	3.2E-02	3.3E-04	2.4E-01	1.7E-02	6.9E-03	9.2E-03	-2.9E-01	-1.4E-02	6.6E-03
51	392500	3750300	5.4E-01	3.2E-02	3.3E-04	2.4E-01	1.8E-02	6.8E-03	9.7E-03	-3.0E-01	-1.5E-02	6.5E-03
52	392600	3750300	5.5E-01	3.3E-02	3.4E-04	2.4E-01	1.8E-02	6.7E-03	1.0E-02	-3.0E-01	-1.5E-02	6.4E-03
53	392700	3750300	5.5E-01	3.3E-02	3.5E-04	2.5E-01	1.8E-02	6.6E-03	1.1E-02	-3.1E-01	-1.5E-02	6.3E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
54	392800	3750300	5.7E-01	3.4E-02	3.6E-04	2.5E-01	1.9E-02	6.6E-03	1.1E-02	-3.1E-01	-1.5E-02	6.2E-03
55	392900	3750300	5.8E-01	3.5E-02	3.7E-04	2.6E-01	1.9E-02	6.5E-03	1.2E-02	-3.2E-01	-1.6E-02	6.2E-03
56	393000	3750300	5.9E-01	3.6E-02	3.8E-04	2.7E-01	2.0E-02	6.5E-03	1.3E-02	-3.3E-01	-1.6E-02	6.2E-03
57	393100	3750300	6.1E-01	3.8E-02	3.9E-04	2.8E-01	2.1E-02	6.6E-03	1.4E-02	-3.3E-01	-1.7E-02	6.2E-03
58	393200	3750300	6.3E-01	3.9E-02	4.1E-04	2.9E-01	2.2E-02	6.7E-03	1.4E-02	-3.5E-01	-1.7E-02	6.3E-03
59	393300	3750300	6.6E-01	4.1E-02	4.2E-04	3.0E-01	2.3E-02	6.8E-03	1.5E-02	-3.6E-01	-1.8E-02	6.4E-03
60	393400	3750300	6.9E-01	4.3E-02	4.4E-04	3.1E-01	2.4E-02	7.0E-03	1.6E-02	-3.7E-01	-1.9E-02	6.6E-03
61	393500	3750300	7.2E-01	4.5E-02	4.6E-04	3.3E-01	2.5E-02	7.2E-03	1.8E-02	-3.9E-01	-2.0E-02	6.8E-03
62	393600	3750300	7.7E-01	4.8E-02	4.9E-04	3.4E-01	2.7E-02	7.5E-03	1.9E-02	-4.2E-01	-2.2E-02	7.0E-03
63	393700	3750300	8.3E-01	5.3E-02	5.2E-04	3.6E-01	2.9E-02	7.9E-03	1.9E-02	-4.6E-01	-2.4E-02	7.4E-03
64	393800	3750300	9.1E-01	5.8E-02	5.6E-04	3.9E-01	3.1E-02	8.4E-03	1.8E-02	-5.2E-01	-2.7E-02	7.8E-03
65	393900	3750300	1.0E+00	6.5E-02	6.2E-04	4.2E-01	3.4E-02	9.0E-03	1.8E-02	-5.8E-01	-3.1E-02	8.4E-03
66	394000	3750300	1.1E+00	7.3E-02	6.8E-04	4.6E-01	3.7E-02	9.7E-03	1.8E-02	-6.7E-01	-3.6E-02	9.0E-03
67	394100	3750300	1.3E+00	8.3E-02	7.6E-04	5.0E-01	4.1E-02	1.1E-02	1.7E-02	-7.7E-01	-4.2E-02	9.8E-03
68	394200	3750300	1.4E+00	9.4E-02	8.6E-04	5.6E-01	4.6E-02	1.2E-02	1.7E-02	-8.8E-01	-4.9E-02	1.1E-02
69	394300	3750300	1.6E+00	1.1E-01	9.7E-04	6.2E-01	5.1E-02	1.3E-02	1.6E-02	-9.9E-01	-5.5E-02	1.2E-02
70	394400	3750300	1.8E+00	1.2E-01	1.1E-03	7.0E-01	5.9E-02	1.4E-02	1.6E-02	-1.1E+00	-6.0E-02	1.3E-02
71	394500	3750300	2.0E+00	1.3E-01	1.2E-03	7.8E-01	6.7E-02	1.6E-02	1.6E-02	-1.2E+00	-6.4E-02	1.4E-02
72	394600	3750300	2.2E+00	1.4E-01	1.3E-03	8.6E-01	7.5E-02	1.8E-02	1.5E-02	-1.3E+00	-6.7E-02	1.6E-02
73	394700	3750300	2.3E+00	1.5E-01	1.5E-03	9.5E-01	8.4E-02	2.0E-02	1.5E-02	-1.4E+00	-6.7E-02	1.8E-02
74	394800	3750300	2.5E+00	1.6E-01	1.6E-03	1.0E+00	9.3E-02	2.2E-02	1.4E-02	-1.4E+00	-6.6E-02	2.1E-02
75	394900	3750300	2.5E+00	1.6E-01	1.7E-03	1.1E+00	1.0E-01	2.5E-02	1.3E-02	-1.4E+00	-6.2E-02	2.3E-02
76	395000	3750300	2.6E+00	1.6E-01	1.8E-03	1.2E+00	1.1E-01	2.7E-02	1.2E-02	-1.4E+00	-5.7E-02	2.5E-02
77	395100	3750300	2.6E+00	1.6E-01	1.8E-03	1.2E+00	1.1E-01	2.9E-02	1.1E-02	-1.3E+00	-5.1E-02	2.8E-02
78	395200	3750300	2.5E+00	1.6E-01	1.8E-03	1.3E+00	1.1E-01	3.1E-02	1.0E-02	-1.3E+00	-4.4E-02	2.9E-02
79	395300	3750300	2.5E+00	1.5E-01	1.8E-03	1.3E+00	1.1E-01	3.2E-02	1.0E-02	-1.2E+00	-3.7E-02	3.0E-02
80	395400	3750300	2.4E+00	1.4E-01	1.7E-03	1.3E+00	1.1E-01	3.3E-02	9.9E-03	-1.1E+00	-3.1E-02	3.1E-02
81	392400	3750400	5.8E-01	3.5E-02	3.6E-04	2.6E-01	1.9E-02	7.3E-03	1.0E-02	-3.3E-01	-1.6E-02	6.9E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
82	392500	3750400	5.9E-01	3.6E-02	3.7E-04	2.6E-01	1.9E-02	7.2E-03	1.0E-02	-3.3E-01	-1.6E-02	6.8E-03
83	392600	3750400	6.0E-01	3.6E-02	3.8E-04	2.7E-01	2.0E-02	7.1E-03	1.1E-02	-3.3E-01	-1.7E-02	6.7E-03
84	392700	3750400	6.1E-01	3.7E-02	3.9E-04	2.7E-01	2.0E-02	7.0E-03	1.2E-02	-3.4E-01	-1.7E-02	6.6E-03
85	392800	3750400	6.2E-01	3.8E-02	4.0E-04	2.8E-01	2.1E-02	6.9E-03	1.2E-02	-3.4E-01	-1.7E-02	6.5E-03
86	392900	3750400	6.4E-01	3.9E-02	4.1E-04	2.9E-01	2.1E-02	6.9E-03	1.3E-02	-3.5E-01	-1.8E-02	6.5E-03
87	393000	3750400	6.5E-01	4.0E-02	4.2E-04	2.9E-01	2.2E-02	6.9E-03	1.4E-02	-3.6E-01	-1.8E-02	6.5E-03
88	393100	3750400	6.7E-01	4.2E-02	4.4E-04	3.0E-01	2.3E-02	6.9E-03	1.5E-02	-3.7E-01	-1.9E-02	6.5E-03
89	393200	3750400	7.0E-01	4.4E-02	4.5E-04	3.2E-01	2.4E-02	7.0E-03	1.6E-02	-3.8E-01	-1.9E-02	6.6E-03
90	393300	3750400	7.2E-01	4.6E-02	4.7E-04	3.3E-01	2.5E-02	7.2E-03	1.7E-02	-4.0E-01	-2.0E-02	6.7E-03
91	393400	3750400	7.6E-01	4.8E-02	4.9E-04	3.4E-01	2.7E-02	7.4E-03	1.8E-02	-4.1E-01	-2.1E-02	6.9E-03
92	393500	3750400	8.0E-01	5.1E-02	5.2E-04	3.6E-01	2.8E-02	7.7E-03	2.0E-02	-4.4E-01	-2.3E-02	7.2E-03
93	393600	3750400	8.6E-01	5.5E-02	5.5E-04	3.8E-01	3.0E-02	8.1E-03	2.1E-02	-4.7E-01	-2.5E-02	7.5E-03
94	393700	3750400	9.3E-01	6.0E-02	5.9E-04	4.1E-01	3.3E-02	8.6E-03	2.1E-02	-5.2E-01	-2.7E-02	8.0E-03
95	393800	3750400	1.0E+00	6.7E-02	6.4E-04	4.4E-01	3.5E-02	9.1E-03	2.0E-02	-5.9E-01	-3.2E-02	8.5E-03
96	393900	3750400	1.2E+00	7.6E-02	7.1E-04	4.8E-01	3.9E-02	9.8E-03	2.1E-02	-6.8E-01	-3.7E-02	9.1E-03
97	394000	3750400	1.3E+00	8.7E-02	7.9E-04	5.3E-01	4.3E-02	1.1E-02	2.0E-02	-7.9E-01	-4.4E-02	9.9E-03
98	394100	3750400	1.5E+00	9.9E-02	8.9E-04	5.8E-01	4.8E-02	1.2E-02	2.0E-02	-9.2E-01	-5.2E-02	1.1E-02
99	394200	3750400	1.7E+00	1.1E-01	1.0E-03	6.5E-01	5.4E-02	1.3E-02	1.9E-02	-1.1E+00	-5.9E-02	1.2E-02
100	394300	3750400	1.9E+00	1.3E-01	1.2E-03	7.4E-01	6.2E-02	1.4E-02	1.9E-02	-1.2E+00	-6.7E-02	1.3E-02
101	394400	3750400	2.2E+00	1.4E-01	1.3E-03	8.3E-01	7.2E-02	1.6E-02	1.9E-02	-1.3E+00	-7.3E-02	1.5E-02
102	394500	3750400	2.4E+00	1.6E-01	1.5E-03	9.3E-01	8.3E-02	1.8E-02	1.8E-02	-1.5E+00	-7.6E-02	1.6E-02
103	394600	3750400	2.6E+00	1.7E-01	1.6E-03	1.0E+00	9.4E-02	2.0E-02	1.7E-02	-1.5E+00	-7.7E-02	1.8E-02
104	394700	3750400	2.7E+00	1.8E-01	1.8E-03	1.1E+00	1.0E-01	2.3E-02	1.6E-02	-1.6E+00	-7.5E-02	2.1E-02
105	394800	3750400	2.8E+00	1.8E-01	1.9E-03	1.2E+00	1.1E-01	2.5E-02	1.5E-02	-1.6E+00	-7.0E-02	2.3E-02
106	394900	3750400	2.9E+00	1.8E-01	2.0E-03	1.3E+00	1.2E-01	2.8E-02	1.4E-02	-1.5E+00	-6.4E-02	2.6E-02
107	395000	3750400	2.9E+00	1.8E-01	2.1E-03	1.4E+00	1.3E-01	3.0E-02	1.2E-02	-1.5E+00	-5.5E-02	2.8E-02
108	395100	3750400	2.8E+00	1.8E-01	2.1E-03	1.4E+00	1.3E-01	3.2E-02	1.2E-02	-1.4E+00	-4.7E-02	3.0E-02
109	395200	3750400	2.7E+00	1.7E-01	2.0E-03	1.4E+00	1.3E-01	3.3E-02	1.2E-02	-1.3E+00	-3.8E-02	3.1E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
110	395300	3750400	2.6E+00	1.6E-01	1.9E-03	1.4E+00	1.3E-01	3.4E-02	1.1E-02	-1.1E+00	-3.1E-02	3.2E-02
111	395400	3750400	2.4E+00	1.5E-01	1.8E-03	1.4E+00	1.2E-01	3.4E-02	1.0E-02	-1.0E+00	-2.4E-02	3.2E-02
112	392400	3750500	6.4E-01	3.9E-02	4.0E-04	2.8E-01	2.1E-02	7.7E-03	1.1E-02	-3.6E-01	-1.8E-02	7.3E-03
113	392500	3750500	6.5E-01	4.0E-02	4.1E-04	2.9E-01	2.1E-02	7.6E-03	1.2E-02	-3.7E-01	-1.8E-02	7.2E-03
114	392600	3750500	6.7E-01	4.1E-02	4.2E-04	2.9E-01	2.2E-02	7.5E-03	1.2E-02	-3.7E-01	-1.9E-02	7.0E-03
115	392700	3750500	6.8E-01	4.2E-02	4.3E-04	3.0E-01	2.3E-02	7.4E-03	1.2E-02	-3.8E-01	-1.9E-02	6.9E-03
116	392800	3750500	6.9E-01	4.3E-02	4.5E-04	3.1E-01	2.3E-02	7.3E-03	1.3E-02	-3.8E-01	-2.0E-02	6.9E-03
117	392900	3750500	7.1E-01	4.4E-02	4.6E-04	3.2E-01	2.4E-02	7.3E-03	1.4E-02	-3.9E-01	-2.0E-02	6.8E-03
118	393000	3750500	7.3E-01	4.6E-02	4.8E-04	3.3E-01	2.5E-02	7.3E-03	1.5E-02	-4.0E-01	-2.1E-02	6.8E-03
119	393100	3750500	7.5E-01	4.7E-02	4.9E-04	3.4E-01	2.6E-02	7.4E-03	1.6E-02	-4.1E-01	-2.1E-02	6.9E-03
120	393200	3750500	7.8E-01	4.9E-02	5.1E-04	3.5E-01	2.7E-02	7.5E-03	1.7E-02	-4.3E-01	-2.2E-02	7.0E-03
121	393300	3750500	8.1E-01	5.2E-02	5.3E-04	3.7E-01	2.9E-02	7.7E-03	1.9E-02	-4.4E-01	-2.3E-02	7.2E-03
122	393600	3750500	9.7E-01	6.3E-02	6.3E-04	4.3E-01	3.5E-02	8.9E-03	2.4E-02	-5.4E-01	-2.8E-02	8.2E-03
123	393700	3750500	1.1E+00	7.0E-02	6.8E-04	4.7E-01	3.8E-02	9.4E-03	2.5E-02	-6.0E-01	-3.2E-02	8.8E-03
124	393800	3750500	1.2E+00	7.9E-02	7.4E-04	5.0E-01	4.1E-02	1.0E-02	2.4E-02	-6.9E-01	-3.8E-02	9.4E-03
125	393900	3750500	1.4E+00	9.0E-02	8.2E-04	5.5E-01	4.5E-02	1.1E-02	2.4E-02	-8.0E-01	-4.5E-02	1.0E-02
126	394000	3750500	1.6E+00	1.0E-01	9.3E-04	6.1E-01	5.1E-02	1.2E-02	2.4E-02	-9.5E-01	-5.4E-02	1.1E-02
127	394100	3750500	1.8E+00	1.2E-01	1.1E-03	6.9E-01	5.8E-02	1.3E-02	2.3E-02	-1.1E+00	-6.4E-02	1.2E-02
128	394200	3750500	2.1E+00	1.4E-01	1.2E-03	7.8E-01	6.7E-02	1.5E-02	2.2E-02	-1.3E+00	-7.4E-02	1.3E-02
129	394300	3750500	2.4E+00	1.6E-01	1.4E-03	8.9E-01	7.8E-02	1.6E-02	2.2E-02	-1.5E+00	-8.3E-02	1.5E-02
130	394400	3750500	2.6E+00	1.8E-01	1.6E-03	1.0E+00	9.1E-02	1.8E-02	2.1E-02	-1.6E+00	-8.8E-02	1.7E-02
131	394500	3750500	2.9E+00	1.9E-01	1.8E-03	1.1E+00	1.0E-01	2.1E-02	2.0E-02	-1.7E+00	-9.0E-02	1.9E-02
132	394600	3750500	3.1E+00	2.1E-01	2.0E-03	1.3E+00	1.2E-01	2.3E-02	1.9E-02	-1.8E+00	-8.7E-02	2.1E-02
133	394700	3750500	3.2E+00	2.1E-01	2.2E-03	1.4E+00	1.3E-01	2.6E-02	1.8E-02	-1.8E+00	-8.1E-02	2.4E-02
134	394800	3750500	3.2E+00	2.1E-01	2.3E-03	1.5E+00	1.4E-01	2.9E-02	1.6E-02	-1.7E+00	-7.2E-02	2.7E-02
135	394900	3750500	3.2E+00	2.1E-01	2.4E-03	1.6E+00	1.5E-01	3.2E-02	1.4E-02	-1.6E+00	-6.1E-02	2.9E-02
136	395000	3750500	3.1E+00	2.0E-01	2.4E-03	1.6E+00	1.5E-01	3.4E-02	1.4E-02	-1.5E+00	-5.0E-02	3.1E-02
137	395100	3750500	3.0E+00	1.9E-01	2.3E-03	1.6E+00	1.5E-01	3.4E-02	1.3E-02	-1.3E+00	-3.9E-02	3.2E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
138	395200	3750500	2.8E+00	1.7E-01	2.2E-03	1.6E+00	1.5E-01	3.5E-02	1.2E-02	-1.2E+00	-2.9E-02	3.3E-02
139	395300	3750500	2.6E+00	1.6E-01	2.1E-03	1.5E+00	1.4E-01	3.5E-02	1.1E-02	-1.1E+00	-2.2E-02	3.3E-02
140	395400	3750500	2.4E+00	1.5E-01	1.9E-03	1.5E+00	1.3E-01	3.4E-02	1.0E-02	-9.5E-01	-1.6E-02	3.2E-02
141	392400	3750600	7.1E-01	4.3E-02	4.5E-04	3.1E-01	2.3E-02	8.1E-03	1.2E-02	-4.0E-01	-2.0E-02	7.7E-03
142	392500	3750600	7.3E-01	4.5E-02	4.6E-04	3.2E-01	2.4E-02	8.0E-03	1.2E-02	-4.1E-01	-2.1E-02	7.6E-03
143	392600	3750600	7.4E-01	4.6E-02	4.8E-04	3.3E-01	2.5E-02	7.9E-03	1.3E-02	-4.2E-01	-2.2E-02	7.5E-03
144	392700	3750600	7.6E-01	4.8E-02	4.9E-04	3.3E-01	2.5E-02	7.9E-03	1.4E-02	-4.3E-01	-2.2E-02	7.4E-03
145	392800	3750600	7.8E-01	4.9E-02	5.1E-04	3.4E-01	2.6E-02	7.8E-03	1.4E-02	-4.4E-01	-2.3E-02	7.3E-03
146	392900	3750600	8.0E-01	5.1E-02	5.2E-04	3.5E-01	2.7E-02	7.8E-03	1.5E-02	-4.5E-01	-2.3E-02	7.3E-03
147	393000	3750600	8.2E-01	5.2E-02	5.4E-04	3.7E-01	2.8E-02	7.8E-03	1.6E-02	-4.6E-01	-2.4E-02	7.3E-03
148	393100	3750600	8.5E-01	5.4E-02	5.6E-04	3.8E-01	2.9E-02	7.9E-03	1.7E-02	-4.7E-01	-2.5E-02	7.4E-03
149	393200	3750600	8.8E-01	5.7E-02	5.8E-04	3.9E-01	3.1E-02	8.1E-03	1.9E-02	-4.8E-01	-2.6E-02	7.5E-03
150	393300	3750600	9.2E-01	5.9E-02	6.1E-04	4.1E-01	3.3E-02	8.4E-03	2.1E-02	-5.0E-01	-2.7E-02	7.8E-03
151	393600	3750600	1.1E+00	7.4E-02	7.3E-04	5.0E-01	4.0E-02	9.9E-03	2.7E-02	-6.2E-01	-3.4E-02	9.2E-03
152	393700	3750600	1.2E+00	8.2E-02	7.9E-04	5.4E-01	4.4E-02	1.1E-02	2.9E-02	-7.0E-01	-3.8E-02	9.9E-03
153	393800	3750600	1.4E+00	9.4E-02	8.7E-04	5.9E-01	4.8E-02	1.2E-02	2.8E-02	-8.2E-01	-4.6E-02	1.1E-02
154	393900	3750600	1.6E+00	1.1E-01	9.8E-04	6.5E-01	5.4E-02	1.3E-02	2.8E-02	-9.8E-01	-5.6E-02	1.2E-02
155	394000	3750600	1.9E+00	1.3E-01	1.1E-03	7.3E-01	6.2E-02	1.4E-02	2.8E-02	-1.2E+00	-6.9E-02	1.3E-02
156	394100	3750600	2.2E+00	1.5E-01	1.3E-03	8.3E-01	7.2E-02	1.6E-02	2.7E-02	-1.4E+00	-8.3E-02	1.4E-02
157	394200	3750600	2.6E+00	1.8E-01	1.5E-03	9.6E-01	8.5E-02	1.7E-02	2.6E-02	-1.7E+00	-9.5E-02	1.6E-02
158	394300	3750600	3.0E+00	2.0E-01	1.8E-03	1.1E+00	1.0E-01	1.9E-02	2.6E-02	-1.9E+00	-1.0E-01	1.8E-02
159	394400	3750600	3.3E+00	2.3E-01	2.0E-03	1.3E+00	1.2E-01	2.2E-02	2.4E-02	-2.0E+00	-1.1E-01	2.0E-02
160	394500	3750600	3.5E+00	2.4E-01	2.3E-03	1.4E+00	1.4E-01	2.5E-02	2.3E-02	-2.1E+00	-1.0E-01	2.2E-02
161	394600	3750600	3.7E+00	2.5E-01	2.5E-03	1.6E+00	1.5E-01	2.8E-02	2.1E-02	-2.1E+00	-9.5E-02	2.6E-02
162	394700	3750600	3.7E+00	2.5E-01	2.7E-03	1.7E+00	1.6E-01	3.1E-02	1.9E-02	-2.0E+00	-8.2E-02	2.9E-02
163	394800	3750600	3.6E+00	2.4E-01	2.8E-03	1.8E+00	1.7E-01	3.4E-02	1.7E-02	-1.8E+00	-6.7E-02	3.1E-02
164	394900	3750600	3.5E+00	2.3E-01	2.7E-03	1.9E+00	1.7E-01	3.6E-02	1.6E-02	-1.6E+00	-5.2E-02	3.3E-02
165	395000	3750600	3.3E+00	2.1E-01	2.7E-03	1.9E+00	1.7E-01	3.7E-02	1.5E-02	-1.4E+00	-3.9E-02	3.4E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
166	395100	3750600	3.1E+00	1.9E-01	2.5E-03	1.8E+00	1.7E-01	3.7E-02	1.4E-02	-1.3E+00	-2.7E-02	3.4E-02
167	395200	3750600	2.8E+00	1.8E-01	2.3E-03	1.7E+00	1.6E-01	3.6E-02	1.2E-02	-1.1E+00	-1.8E-02	3.4E-02
168	395300	3750600	2.6E+00	1.6E-01	2.1E-03	1.6E+00	1.5E-01	3.5E-02	1.2E-02	-9.4E-01	-1.1E-02	3.3E-02
169	395400	3750600	2.3E+00	1.4E-01	1.9E-03	1.5E+00	1.4E-01	3.3E-02	1.0E-02	-8.2E-01	-6.4E-03	3.1E-02
170	392400	3750700	7.8E-01	4.8E-02	5.0E-04	3.4E-01	2.5E-02	8.6E-03	1.2E-02	-4.4E-01	-2.3E-02	8.1E-03
171	392500	3750700	8.1E-01	5.0E-02	5.2E-04	3.5E-01	2.6E-02	8.5E-03	1.3E-02	-4.6E-01	-2.4E-02	8.0E-03
172	392600	3750700	8.4E-01	5.2E-02	5.4E-04	3.6E-01	2.8E-02	8.5E-03	1.4E-02	-4.7E-01	-2.5E-02	7.9E-03
173	392700	3750700	8.6E-01	5.5E-02	5.6E-04	3.7E-01	2.9E-02	8.4E-03	1.5E-02	-4.9E-01	-2.6E-02	7.9E-03
174	392800	3750700	8.9E-01	5.7E-02	5.8E-04	3.9E-01	3.0E-02	8.4E-03	1.6E-02	-5.0E-01	-2.7E-02	7.8E-03
175	392900	3750700	9.1E-01	5.9E-02	6.0E-04	4.0E-01	3.1E-02	8.4E-03	1.6E-02	-5.1E-01	-2.8E-02	7.8E-03
176	393000	3750700	9.4E-01	6.1E-02	6.3E-04	4.1E-01	3.2E-02	8.5E-03	1.8E-02	-5.3E-01	-2.8E-02	7.9E-03
177	393100	3750700	9.7E-01	6.3E-02	6.5E-04	4.3E-01	3.4E-02	8.7E-03	1.9E-02	-5.4E-01	-2.9E-02	8.0E-03
178	393200	3750700	1.0E+00	6.6E-02	6.8E-04	4.5E-01	3.6E-02	8.9E-03	2.1E-02	-5.6E-01	-3.1E-02	8.2E-03
179	393300	3750700	1.1E+00	7.0E-02	7.1E-04	4.7E-01	3.8E-02	9.3E-03	2.4E-02	-5.8E-01	-3.2E-02	8.6E-03
180	393400	3750700	1.1E+00	7.4E-02	7.5E-04	5.0E-01	4.0E-02	9.8E-03	2.5E-02	-6.1E-01	-3.4E-02	9.1E-03
181	393500	3750700	1.2E+00	8.0E-02	7.9E-04	5.4E-01	4.4E-02	1.1E-02	2.8E-02	-6.6E-01	-3.6E-02	9.7E-03
182	393600	3750700	1.3E+00	8.8E-02	8.5E-04	5.8E-01	4.7E-02	1.1E-02	3.1E-02	-7.3E-01	-4.0E-02	1.1E-02
183	393700	3750700	1.5E+00	9.9E-02	9.3E-04	6.3E-01	5.2E-02	1.2E-02	3.4E-02	-8.3E-01	-4.7E-02	1.1E-02
184	393800	3750700	1.7E+00	1.2E-01	1.0E-03	7.0E-01	5.9E-02	1.4E-02	3.4E-02	-1.0E+00	-5.7E-02	1.3E-02
185	393900	3750700	2.0E+00	1.4E-01	1.2E-03	7.9E-01	6.6E-02	1.5E-02	3.4E-02	-1.2E+00	-7.3E-02	1.4E-02
186	394000	3750700	2.4E+00	1.7E-01	1.4E-03	9.0E-01	7.7E-02	1.7E-02	3.3E-02	-1.5E+00	-9.1E-02	1.6E-02
187	394100	3750700	2.9E+00	2.0E-01	1.6E-03	1.0E+00	9.2E-02	1.9E-02	3.2E-02	-1.9E+00	-1.1E-01	1.7E-02
188	394200	3750700	3.4E+00	2.4E-01	1.9E-03	1.2E+00	1.1E-01	2.1E-02	3.1E-02	-2.2E+00	-1.2E-01	1.9E-02
189	394300	3750700	3.8E+00	2.7E-01	2.3E-03	1.4E+00	1.3E-01	2.4E-02	3.0E-02	-2.4E+00	-1.3E-01	2.1E-02
190	394400	3750700	4.1E+00	2.9E-01	2.6E-03	1.6E+00	1.6E-01	2.7E-02	2.8E-02	-2.5E+00	-1.3E-01	2.4E-02
191	394500	3750700	4.3E+00	2.9E-01	2.9E-03	1.9E+00	1.8E-01	3.1E-02	2.6E-02	-2.4E+00	-1.1E-01	2.8E-02
192	394600	3750700	4.3E+00	2.9E-01	3.2E-03	2.0E+00	2.0E-01	3.4E-02	2.3E-02	-2.3E+00	-9.6E-02	3.1E-02
193	394700	3750700	4.2E+00	2.8E-01	3.3E-03	2.1E+00	2.1E-01	3.7E-02	2.0E-02	-2.1E+00	-7.5E-02	3.4E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
194	394800	3750700	4.0E+00	2.6E-01	3.2E-03	2.2E+00	2.1E-01	3.9E-02	1.9E-02	-1.8E+00	-5.4E-02	3.6E-02
195	394900	3750700	3.7E+00	2.4E-01	3.1E-03	2.2E+00	2.1E-01	4.0E-02	1.8E-02	-1.5E+00	-3.6E-02	3.6E-02
196	395000	3750700	3.4E+00	2.2E-01	2.9E-03	2.1E+00	2.0E-01	3.9E-02	1.6E-02	-1.3E+00	-2.1E-02	3.6E-02
197	395100	3750700	3.1E+00	1.9E-01	2.6E-03	2.0E+00	1.8E-01	3.8E-02	1.4E-02	-1.1E+00	-1.1E-02	3.5E-02
198	395200	3750700	2.8E+00	1.7E-01	2.4E-03	1.8E+00	1.7E-01	3.6E-02	1.3E-02	-9.1E-01	-3.6E-03	3.3E-02
199	395300	3750700	2.5E+00	1.5E-01	2.1E-03	1.7E+00	1.5E-01	3.4E-02	1.2E-02	-7.8E-01	4.8E-04	3.2E-02
200	395400	3750700	2.2E+00	1.3E-01	1.8E-03	1.5E+00	1.4E-01	3.1E-02	1.1E-02	-6.7E-01	3.0E-03	3.0E-02
201	392400	3750800	8.6E-01	5.4E-02	5.5E-04	3.7E-01	2.8E-02	9.1E-03	1.3E-02	-4.9E-01	-2.6E-02	8.5E-03
202	392500	3750800	9.0E-01	5.6E-02	5.8E-04	3.9E-01	2.9E-02	9.1E-03	1.4E-02	-5.1E-01	-2.7E-02	8.5E-03
203	392600	3750800	9.4E-01	5.9E-02	6.1E-04	4.0E-01	3.1E-02	9.0E-03	1.5E-02	-5.3E-01	-2.9E-02	8.4E-03
204	392700	3750800	9.8E-01	6.3E-02	6.4E-04	4.2E-01	3.3E-02	9.0E-03	1.6E-02	-5.6E-01	-3.0E-02	8.4E-03
205	392800	3750800	1.0E+00	6.6E-02	6.7E-04	4.4E-01	3.4E-02	9.1E-03	1.8E-02	-5.8E-01	-3.2E-02	8.4E-03
206	392900	3750800	1.1E+00	6.9E-02	7.0E-04	4.6E-01	3.6E-02	9.2E-03	1.9E-02	-6.0E-01	-3.3E-02	8.5E-03
207	393000	3750800	1.1E+00	7.2E-02	7.3E-04	4.8E-01	3.8E-02	9.3E-03	2.0E-02	-6.2E-01	-3.4E-02	8.6E-03
208	393100	3750800	1.1E+00	7.5E-02	7.6E-04	5.0E-01	4.0E-02	9.6E-03	2.2E-02	-6.4E-01	-3.6E-02	8.8E-03
209	393200	3750800	1.2E+00	7.9E-02	8.0E-04	5.2E-01	4.2E-02	1.0E-02	2.3E-02	-6.6E-01	-3.7E-02	9.2E-03
210	393300	3750800	1.2E+00	8.4E-02	8.4E-04	5.5E-01	4.4E-02	1.1E-02	2.6E-02	-6.9E-01	-3.9E-02	9.7E-03
211	393400	3750800	1.3E+00	8.9E-02	8.9E-04	5.9E-01	4.8E-02	1.1E-02	2.9E-02	-7.3E-01	-4.1E-02	1.0E-02
212	393500	3750800	1.4E+00	9.7E-02	9.5E-04	6.3E-01	5.2E-02	1.2E-02	3.3E-02	-7.8E-01	-4.5E-02	1.1E-02
213	393600	3750800	1.6E+00	1.1E-01	1.0E-03	6.9E-01	5.7E-02	1.3E-02	3.6E-02	-8.8E-01	-5.0E-02	1.2E-02
214	393700	3750800	1.8E+00	1.2E-01	1.1E-03	7.6E-01	6.4E-02	1.5E-02	4.1E-02	-1.0E+00	-6.0E-02	1.4E-02
215	393800	3750800	2.1E+00	1.5E-01	1.3E-03	8.5E-01	7.3E-02	1.7E-02	4.2E-02	-1.3E+00	-7.5E-02	1.5E-02
216	393900	3750800	2.6E+00	1.8E-01	1.5E-03	9.8E-01	8.4E-02	1.9E-02	4.2E-02	-1.6E+00	-9.8E-02	1.7E-02
217	394000	3750800	3.2E+00	2.3E-01	1.7E-03	1.1E+00	1.0E-01	2.1E-02	4.1E-02	-2.1E+00	-1.3E-01	2.0E-02
218	394100	3750800	3.9E+00	2.8E-01	2.1E-03	1.4E+00	1.3E-01	2.4E-02	3.9E-02	-2.5E+00	-1.5E-01	2.2E-02
219	394200	3750800	4.5E+00	3.2E-01	2.5E-03	1.6E+00	1.6E-01	2.7E-02	3.9E-02	-2.9E+00	-1.7E-01	2.5E-02
220	394300	3750800	4.9E+00	3.5E-01	3.0E-03	1.9E+00	1.9E-01	3.1E-02	3.6E-02	-3.0E+00	-1.6E-01	2.8E-02
221	394400	3750800	5.1E+00	3.6E-01	3.5E-03	2.2E+00	2.2E-01	3.5E-02	3.4E-02	-2.9E+00	-1.4E-01	3.2E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
222	394500	3750800	5.1E+00	3.5E-01	3.8E-03	2.4E+00	2.4E-01	3.9E-02	3.0E-02	-2.7E+00	-1.2E-01	3.5E-02
223	394600	3750800	5.0E+00	3.4E-01	4.0E-03	2.6E+00	2.5E-01	4.2E-02	2.5E-02	-2.4E+00	-8.4E-02	3.8E-02
224	394700	3750800	4.6E+00	3.1E-01	3.9E-03	2.7E+00	2.5E-01	4.4E-02	2.4E-02	-2.0E+00	-5.5E-02	4.0E-02
225	394800	3750800	4.2E+00	2.8E-01	3.7E-03	2.6E+00	2.5E-01	4.3E-02	2.1E-02	-1.6E+00	-2.9E-02	4.0E-02
226	394900	3750800	3.8E+00	2.4E-01	3.4E-03	2.5E+00	2.3E-01	4.2E-02	1.8E-02	-1.3E+00	-1.1E-02	3.8E-02
227	395000	3750800	3.3E+00	2.1E-01	3.0E-03	2.3E+00	2.1E-01	4.0E-02	1.6E-02	-1.0E+00	6.4E-04	3.7E-02
228	395100	3750800	2.9E+00	1.9E-01	2.7E-03	2.1E+00	1.9E-01	3.7E-02	1.5E-02	-8.4E-01	7.2E-03	3.4E-02
229	395200	3750800	2.6E+00	1.6E-01	2.3E-03	1.9E+00	1.7E-01	3.4E-02	1.4E-02	-7.0E-01	1.0E-02	3.2E-02
230	395300	3750800	2.3E+00	1.4E-01	2.0E-03	1.7E+00	1.5E-01	3.1E-02	1.3E-02	-6.0E-01	1.1E-02	2.9E-02
231	395400	3750800	2.0E+00	1.2E-01	1.7E-03	1.5E+00	1.3E-01	2.9E-02	1.2E-02	-5.3E-01	1.0E-02	2.7E-02
232	392400	3750900	9.4E-01	5.9E-02	6.1E-04	4.1E-01	3.1E-02	9.6E-03	1.2E-02	-5.4E-01	-2.8E-02	8.9E-03
233	392500	3750900	9.9E-01	6.3E-02	6.4E-04	4.3E-01	3.3E-02	9.6E-03	1.4E-02	-5.7E-01	-3.0E-02	8.9E-03
234	392600	3750900	1.0E+00	6.7E-02	6.8E-04	4.5E-01	3.5E-02	9.6E-03	1.5E-02	-6.0E-01	-3.2E-02	8.9E-03
235	392700	3750900	1.1E+00	7.2E-02	7.3E-04	4.7E-01	3.7E-02	9.7E-03	1.7E-02	-6.4E-01	-3.5E-02	9.0E-03
236	392800	3750900	1.2E+00	7.6E-02	7.7E-04	5.0E-01	3.9E-02	9.8E-03	1.9E-02	-6.7E-01	-3.7E-02	9.1E-03
237	392900	3750900	1.2E+00	8.1E-02	8.1E-04	5.2E-01	4.1E-02	1.0E-02	2.1E-02	-7.1E-01	-4.0E-02	9.2E-03
238	393000	3750900	1.3E+00	8.6E-02	8.6E-04	5.5E-01	4.4E-02	1.0E-02	2.3E-02	-7.4E-01	-4.2E-02	9.5E-03
239	393100	3750900	1.4E+00	9.2E-02	9.1E-04	5.8E-01	4.7E-02	1.1E-02	2.5E-02	-7.7E-01	-4.5E-02	9.9E-03
240	393200	3750900	1.4E+00	9.7E-02	9.6E-04	6.2E-01	5.0E-02	1.1E-02	2.7E-02	-8.1E-01	-4.7E-02	1.0E-02
241	393300	3750900	1.5E+00	1.0E-01	1.0E-03	6.6E-01	5.3E-02	1.2E-02	3.0E-02	-8.5E-01	-5.0E-02	1.1E-02
242	393400	3750900	1.6E+00	1.1E-01	1.1E-03	7.1E-01	5.8E-02	1.3E-02	3.4E-02	-9.0E-01	-5.3E-02	1.2E-02
243	393500	3750900	1.7E+00	1.2E-01	1.2E-03	7.7E-01	6.4E-02	1.5E-02	3.9E-02	-9.7E-01	-5.7E-02	1.4E-02
244	393600	3750900	1.9E+00	1.4E-01	1.3E-03	8.5E-01	7.1E-02	1.7E-02	4.4E-02	-1.1E+00	-6.5E-02	1.5E-02
245	393700	3750900	2.3E+00	1.6E-01	1.4E-03	9.5E-01	8.1E-02	1.9E-02	5.0E-02	-1.3E+00	-7.8E-02	1.7E-02
246	393800	3750900	2.8E+00	2.0E-01	1.6E-03	1.1E+00	9.3E-02	2.1E-02	5.4E-02	-1.7E+00	-1.0E-01	2.0E-02
247	393900	3750900	3.5E+00	2.5E-01	1.9E-03	1.3E+00	1.1E-01	2.5E-02	5.3E-02	-2.3E+00	-1.4E-01	2.3E-02
248	394000	3750900	4.5E+00	3.3E-01	2.3E-03	1.5E+00	1.4E-01	2.8E-02	5.2E-02	-3.0E+00	-1.9E-01	2.6E-02
249	394100	3750900	5.4E+00	4.0E-01	2.8E-03	1.8E+00	1.8E-01	3.3E-02	5.0E-02	-3.6E+00	-2.2E-01	3.0E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
250	394200	3750900	6.1E+00	4.4E-01	3.5E-03	2.2E+00	2.3E-01	3.7E-02	4.8E-02	-3.9E+00	-2.2E-01	3.4E-02
251	394300	3750900	6.4E+00	4.6E-01	4.2E-03	2.6E+00	2.7E-01	4.2E-02	4.3E-02	-3.8E+00	-1.9E-01	3.8E-02
252	394800	3750900	4.2E+00	2.8E-01	4.0E-03	3.0E+00	2.8E-01	4.6E-02	2.2E-02	-1.2E+00	7.0E-03	4.2E-02
253	394900	3750900	3.6E+00	2.4E-01	3.5E-03	2.7E+00	2.5E-01	4.2E-02	2.0E-02	-9.0E-01	1.9E-02	3.9E-02
254	395000	3750900	3.1E+00	2.0E-01	3.0E-03	2.4E+00	2.2E-01	3.8E-02	1.8E-02	-7.0E-01	2.3E-02	3.5E-02
255	395100	3750900	2.7E+00	1.7E-01	2.6E-03	2.1E+00	1.9E-01	3.5E-02	1.6E-02	-5.8E-01	2.4E-02	3.2E-02
256	395200	3750900	2.3E+00	1.4E-01	2.2E-03	1.8E+00	1.7E-01	3.1E-02	1.4E-02	-4.9E-01	2.1E-02	2.9E-02
257	395300	3750900	2.0E+00	1.2E-01	1.8E-03	1.6E+00	1.4E-01	2.8E-02	1.2E-02	-4.4E-01	1.8E-02	2.7E-02
258	395400	3750900	1.8E+00	1.1E-01	1.6E-03	1.4E+00	1.2E-01	2.6E-02	1.1E-02	-4.0E-01	1.5E-02	2.4E-02
259	392400	3751000	1.0E+00	6.4E-02	6.6E-04	4.4E-01	3.3E-02	9.9E-03	1.2E-02	-5.8E-01	-3.0E-02	9.3E-03
260	392500	3751000	1.1E+00	6.9E-02	7.1E-04	4.7E-01	3.6E-02	1.0E-02	1.4E-02	-6.2E-01	-3.3E-02	9.3E-03
261	392600	3751000	1.2E+00	7.5E-02	7.6E-04	4.9E-01	3.8E-02	1.0E-02	1.5E-02	-6.7E-01	-3.6E-02	9.4E-03
262	392700	3751000	1.2E+00	8.1E-02	8.2E-04	5.3E-01	4.1E-02	1.0E-02	1.7E-02	-7.2E-01	-4.0E-02	9.5E-03
263	392800	3751000	1.3E+00	8.8E-02	8.8E-04	5.6E-01	4.5E-02	1.1E-02	1.9E-02	-7.7E-01	-4.3E-02	9.7E-03
264	392900	3751000	1.4E+00	9.6E-02	9.4E-04	6.0E-01	4.8E-02	1.1E-02	2.2E-02	-8.3E-01	-4.8E-02	1.0E-02
265	393000	3751000	1.5E+00	1.0E-01	1.0E-03	6.4E-01	5.2E-02	1.2E-02	2.5E-02	-8.9E-01	-5.2E-02	1.0E-02
266	393100	3751000	1.6E+00	1.1E-01	1.1E-03	6.9E-01	5.6E-02	1.2E-02	2.8E-02	-9.5E-01	-5.7E-02	1.1E-02
267	393200	3751000	1.8E+00	1.2E-01	1.2E-03	7.4E-01	6.1E-02	1.3E-02	3.2E-02	-1.0E+00	-6.2E-02	1.2E-02
268	393300	3751000	1.9E+00	1.3E-01	1.3E-03	8.0E-01	6.6E-02	1.5E-02	3.6E-02	-1.1E+00	-6.7E-02	1.3E-02
269	393400	3751000	2.0E+00	1.4E-01	1.4E-03	8.7E-01	7.2E-02	1.6E-02	3.9E-02	-1.2E+00	-7.2E-02	1.5E-02
270	393500	3751000	2.2E+00	1.6E-01	1.5E-03	9.6E-01	8.1E-02	1.8E-02	4.6E-02	-1.3E+00	-7.8E-02	1.7E-02
271	393700	3751000	3.0E+00	2.2E-01	1.8E-03	1.2E+00	1.1E-01	2.5E-02	6.3E-02	-1.8E+00	-1.1E-01	2.3E-02
272	393800	3751000	3.9E+00	2.8E-01	2.1E-03	1.4E+00	1.3E-01	2.9E-02	7.2E-02	-2.4E+00	-1.5E-01	2.7E-02
273	393900	3751000	5.2E+00	3.9E-01	2.6E-03	1.7E+00	1.6E-01	3.4E-02	7.1E-02	-3.5E+00	-2.2E-01	3.2E-02
274	394000	3751000	6.8E+00	5.1E-01	3.2E-03	2.1E+00	2.2E-01	4.0E-02	6.9E-02	-4.6E+00	-2.9E-01	3.7E-02
275	394100	3751000	7.9E+00	5.9E-01	4.1E-03	2.7E+00	2.8E-01	4.7E-02	6.7E-02	-5.3E+00	-3.1E-01	4.3E-02
276	394200	3751000	8.3E+00	6.1E-01	5.1E-03	3.2E+00	3.4E-01	5.4E-02	6.0E-02	-5.1E+00	-2.7E-01	4.9E-02
277	394300	3751000	8.1E+00	5.8E-01	6.0E-03	3.7E+00	3.9E-01	6.1E-02	5.2E-02	-4.3E+00	-1.9E-01	5.5E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
278	394800	3751000	4.0E+00	2.6E-01	4.1E-03	3.3E+00	3.1E-01	4.6E-02	2.5E-02	-6.3E-01	4.9E-02	4.2E-02
279	394900	3751000	3.3E+00	2.1E-01	3.4E-03	2.9E+00	2.6E-01	4.0E-02	2.2E-02	-4.6E-01	4.7E-02	3.7E-02
280	395000	3751000	2.8E+00	1.8E-01	2.8E-03	2.4E+00	2.2E-01	3.5E-02	1.8E-02	-3.8E-01	4.2E-02	3.2E-02
281	395100	3751000	2.4E+00	1.5E-01	2.3E-03	2.0E+00	1.8E-01	3.1E-02	1.6E-02	-3.4E-01	3.5E-02	2.9E-02
282	395200	3751000	2.0E+00	1.2E-01	1.9E-03	1.7E+00	1.5E-01	2.8E-02	1.4E-02	-3.2E-01	2.8E-02	2.6E-02
283	395300	3751000	1.7E+00	1.1E-01	1.6E-03	1.4E+00	1.3E-01	2.5E-02	1.3E-02	-3.1E-01	2.2E-02	2.3E-02
284	395400	3751000	1.5E+00	9.1E-02	1.4E-03	1.2E+00	1.1E-01	2.3E-02	1.2E-02	-3.0E-01	1.6E-02	2.1E-02
285	392400	3751100	1.1E+00	6.8E-02	7.1E-04	4.7E-01	3.6E-02	1.0E-02	1.2E-02	-6.1E-01	-3.2E-02	9.5E-03
286	392500	3751100	1.2E+00	7.4E-02	7.7E-04	5.0E-01	3.9E-02	1.0E-02	1.4E-02	-6.7E-01	-3.5E-02	9.6E-03
287	392600	3751100	1.3E+00	8.1E-02	8.4E-04	5.4E-01	4.2E-02	1.1E-02	1.5E-02	-7.2E-01	-3.9E-02	9.8E-03
288	392700	3751100	1.4E+00	9.0E-02	9.1E-04	5.8E-01	4.6E-02	1.1E-02	1.7E-02	-7.9E-01	-4.4E-02	1.0E-02
289	392800	3751100	1.5E+00	9.9E-02	1.0E-03	6.3E-01	5.0E-02	1.1E-02	1.9E-02	-8.7E-01	-4.9E-02	1.0E-02
290	392900	3751100	1.6E+00	1.1E-01	1.1E-03	6.8E-01	5.5E-02	1.2E-02	2.2E-02	-9.5E-01	-5.5E-02	1.1E-02
291	393000	3751100	1.8E+00	1.2E-01	1.2E-03	7.5E-01	6.1E-02	1.3E-02	2.5E-02	-1.1E+00	-6.3E-02	1.2E-02
292	393100	3751100	2.0E+00	1.4E-01	1.3E-03	8.1E-01	6.7E-02	1.4E-02	3.0E-02	-1.2E+00	-7.2E-02	1.3E-02
293	393200	3751100	2.2E+00	1.6E-01	1.4E-03	8.9E-01	7.4E-02	1.5E-02	3.5E-02	-1.3E+00	-8.2E-02	1.4E-02
294	393300	3751100	2.4E+00	1.8E-01	1.6E-03	9.9E-01	8.3E-02	1.8E-02	4.1E-02	-1.4E+00	-9.3E-02	1.6E-02
295	393400	3751100	2.7E+00	2.0E-01	1.7E-03	1.1E+00	9.3E-02	2.0E-02	5.0E-02	-1.6E+00	-1.0E-01	1.9E-02
296	393500	3751100	3.0E+00	2.2E-01	1.9E-03	1.2E+00	1.1E-01	2.4E-02	5.6E-02	-1.8E+00	-1.2E-01	2.2E-02
297	393800	3751100	6.0E+00	4.5E-01	3.0E-03	2.0E+00	1.9E-01	4.1E-02	1.0E-01	-4.0E+00	-2.6E-01	3.8E-02
298	393900	3751100	8.7E+00	6.6E-01	3.8E-03	2.6E+00	2.6E-01	5.1E-02	1.0E-01	-6.1E+00	-4.0E-01	4.7E-02
299	394000	3751100	1.1E+01	8.5E-01	4.9E-03	3.3E+00	3.7E-01	6.3E-02	9.5E-02	-7.8E+00	-4.8E-01	5.8E-02
300	394100	3751100	1.2E+01	8.9E-01	6.4E-03	4.1E+00	4.7E-01	7.5E-02	8.9E-02	-7.6E+00	-4.2E-01	6.9E-02
301	394200	3751100	1.1E+01	8.2E-01	8.1E-03	4.8E+00	5.3E-01	8.5E-02	7.6E-02	-6.1E+00	-2.8E-01	7.7E-02
302	394300	3751100	9.8E+00	7.0E-01	8.9E-03	5.4E+00	5.6E-01	8.7E-02	6.5E-02	-4.3E+00	-1.4E-01	7.9E-02
303	394800	3751100	3.5E+00	2.3E-01	3.9E-03	3.4E+00	3.1E-01	4.2E-02	2.5E-02	-7.2E-02	8.3E-02	3.8E-02
304	394900	3751100	2.9E+00	1.8E-01	3.1E-03	2.8E+00	2.5E-01	3.6E-02	2.2E-02	-8.8E-02	6.7E-02	3.3E-02
305	395000	3751100	2.4E+00	1.5E-01	2.5E-03	2.2E+00	2.0E-01	3.1E-02	1.9E-02	-1.3E-01	5.2E-02	2.8E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
306	395100	3751100	2.0E+00	1.2E-01	2.0E-03	1.8E+00	1.6E-01	2.7E-02	1.7E-02	-1.7E-01	3.9E-02	2.5E-02
307	395200	3751100	1.7E+00	1.0E-01	1.7E-03	1.5E+00	1.3E-01	2.4E-02	1.5E-02	-2.0E-01	2.9E-02	2.2E-02
308	395300	3751100	1.5E+00	8.9E-02	1.4E-03	1.2E+00	1.1E-01	2.1E-02	1.3E-02	-2.3E-01	2.1E-02	2.0E-02
309	395400	3751100	1.3E+00	7.6E-02	1.1E-03	1.0E+00	9.1E-02	1.9E-02	1.2E-02	-2.4E-01	1.5E-02	1.8E-02
310	392400	3751200	1.1E+00	7.1E-02	7.4E-04	4.9E-01	3.8E-02	1.0E-02	1.2E-02	-6.4E-01	-3.3E-02	9.6E-03
311	392500	3751200	1.2E+00	7.8E-02	8.2E-04	5.3E-01	4.1E-02	1.1E-02	1.4E-02	-7.0E-01	-3.7E-02	9.8E-03
312	392600	3751200	1.3E+00	8.7E-02	9.0E-04	5.8E-01	4.6E-02	1.1E-02	1.5E-02	-7.7E-01	-4.1E-02	1.0E-02
313	392700	3751200	1.5E+00	9.7E-02	1.0E-03	6.3E-01	5.0E-02	1.1E-02	1.7E-02	-8.5E-01	-4.7E-02	1.0E-02
314	392800	3751200	1.6E+00	1.1E-01	1.1E-03	6.9E-01	5.6E-02	1.2E-02	1.9E-02	-9.5E-01	-5.3E-02	1.1E-02
315	392900	3751200	1.8E+00	1.2E-01	1.2E-03	7.7E-01	6.3E-02	1.3E-02	2.2E-02	-1.1E+00	-6.2E-02	1.1E-02
316	393000	3751200	2.1E+00	1.4E-01	1.4E-03	8.6E-01	7.1E-02	1.4E-02	2.6E-02	-1.2E+00	-7.2E-02	1.2E-02
317	393100	3751200	2.4E+00	1.7E-01	1.5E-03	9.6E-01	8.0E-02	1.5E-02	3.0E-02	-1.4E+00	-8.6E-02	1.4E-02
318	393200	3751200	2.7E+00	2.0E-01	1.7E-03	1.1E+00	9.1E-02	1.8E-02	3.7E-02	-1.6E+00	-1.0E-01	1.6E-02
319	393300	3751200	3.2E+00	2.3E-01	2.0E-03	1.2E+00	1.0E-01	2.1E-02	4.5E-02	-1.9E+00	-1.3E-01	1.9E-02
320	393400	3751200	3.7E+00	2.8E-01	2.2E-03	1.4E+00	1.2E-01	2.5E-02	5.7E-02	-2.3E+00	-1.6E-01	2.3E-02
321	393500	3751200	4.4E+00	3.4E-01	2.5E-03	1.6E+00	1.4E-01	3.1E-02	7.3E-02	-2.8E+00	-1.9E-01	2.9E-02
322	393800	3751200	1.1E+01	8.6E-01	4.7E-03	3.1E+00	3.4E-01	6.4E-02	1.5E-01	-7.8E+00	-5.2E-01	5.9E-02
323	393900	3751200	1.7E+01	1.4E+00	6.3E-03	4.3E+00	5.2E-01	8.5E-02	1.6E-01	-1.3E+01	-8.5E-01	7.9E-02
324	394000	3751200	1.9E+01	1.5E+00	8.4E-03	5.7E+00	7.2E-01	1.1E-01	1.5E-01	-1.4E+01	-7.8E-01	1.0E-01
325	394100	3751200	1.6E+01	1.3E+00	1.2E-02	6.7E+00	7.9E-01	1.3E-01	1.3E-01	-9.7E+00	-4.6E-01	1.2E-01
326	394800	3751200	2.9E+00	1.9E-01	3.4E-03	3.2E+00	2.9E-01	3.6E-02	2.7E-02	3.2E-01	1.0E-01	3.3E-02
327	394900	3751200	2.3E+00	1.5E-01	2.7E-03	2.5E+00	2.2E-01	3.0E-02	2.2E-02	1.4E-01	7.2E-02	2.8E-02
328	395000	3751200	1.9E+00	1.2E-01	2.1E-03	1.9E+00	1.7E-01	2.6E-02	1.9E-02	5.2E-03	5.2E-02	2.4E-02
329	395100	3751200	1.6E+00	1.0E-01	1.7E-03	1.5E+00	1.4E-01	2.3E-02	1.7E-02	-8.9E-02	3.7E-02	2.1E-02
330	395200	3751200	1.4E+00	8.5E-02	1.4E-03	1.2E+00	1.1E-01	2.0E-02	1.5E-02	-1.5E-01	2.6E-02	1.9E-02
331	395300	3751200	1.2E+00	7.3E-02	1.1E-03	1.0E+00	9.1E-02	1.8E-02	1.3E-02	-1.9E-01	1.8E-02	1.7E-02
332	395400	3751200	1.1E+00	6.3E-02	9.5E-04	8.6E-01	7.6E-02	1.7E-02	1.2E-02	-2.1E-01	1.2E-02	1.6E-02
333	392800	3751300	1.7E+00	1.2E-01	1.2E-03	7.5E-01	6.1E-02	1.2E-02	1.9E-02	-1.0E+00	-5.6E-02	1.1E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
334	392900	3751300	2.0E+00	1.3E-01	1.4E-03	8.4E-01	6.9E-02	1.3E-02	2.2E-02	-1.1E+00	-6.5E-02	1.2E-02
335	393000	3751300	2.3E+00	1.6E-01	1.6E-03	9.6E-01	8.0E-02	1.5E-02	2.6E-02	-1.3E+00	-7.8E-02	1.3E-02
336	393100	3751300	2.7E+00	1.9E-01	1.8E-03	1.1E+00	9.4E-02	1.7E-02	3.1E-02	-1.6E+00	-9.7E-02	1.5E-02
337	393200	3751300	3.2E+00	2.3E-01	2.1E-03	1.3E+00	1.1E-01	2.0E-02	3.8E-02	-1.9E+00	-1.2E-01	1.8E-02
338	393300	3751300	4.0E+00	2.9E-01	2.4E-03	1.5E+00	1.3E-01	2.4E-02	4.7E-02	-2.4E+00	-1.6E-01	2.2E-02
339	393400	3751300	5.0E+00	3.9E-01	2.9E-03	1.8E+00	1.6E-01	3.1E-02	6.1E-02	-3.2E+00	-2.2E-01	2.8E-02
340	393500	3751300	6.7E+00	5.3E-01	3.4E-03	2.2E+00	2.1E-01	4.1E-02	8.1E-02	-4.5E+00	-3.2E-01	3.8E-02
341	393600	3751300	9.5E+00	7.6E-01	4.2E-03	2.8E+00	2.8E-01	5.6E-02	1.2E-01	-6.7E+00	-4.8E-01	5.2E-02
342	393700	3751300	1.5E+01	1.2E+00	5.6E-03	3.9E+00	4.4E-01	8.0E-02	1.8E-01	-1.1E+01	-7.8E-01	7.4E-02
343	393800	3751300	2.9E+01	2.4E+00	8.5E-03	6.1E+00	8.3E-01	1.1E-01	2.6E-01	-2.3E+01	-1.5E+00	1.0E-01
344	394500	3751300	4.7E+00	3.2E-01	7.0E-03	6.9E+00	6.1E-01	5.7E-02	5.2E-02	2.2E+00	2.9E-01	5.0E-02
345	394600	3751300	3.6E+00	2.4E-01	5.0E-03	5.0E+00	4.5E-01	4.4E-02	4.1E-02	1.5E+00	2.1E-01	3.9E-02
346	394700	3751300	2.8E+00	1.8E-01	3.7E-03	3.7E+00	3.3E-01	3.5E-02	3.4E-02	8.7E-01	1.4E-01	3.2E-02
347	394800	3751300	2.2E+00	1.4E-01	2.8E-03	2.7E+00	2.4E-01	2.9E-02	2.8E-02	4.6E-01	9.6E-02	2.6E-02
348	394900	3751300	1.8E+00	1.2E-01	2.1E-03	2.0E+00	1.8E-01	2.5E-02	2.3E-02	1.9E-01	6.4E-02	2.3E-02
349	395000	3751300	1.5E+00	9.6E-02	1.7E-03	1.6E+00	1.4E-01	2.1E-02	1.9E-02	2.0E-02	4.3E-02	2.0E-02
350	395100	3751300	1.3E+00	8.1E-02	1.3E-03	1.2E+00	1.1E-01	1.9E-02	1.7E-02	-8.1E-02	2.9E-02	1.8E-02
351	395200	3751300	1.1E+00	6.9E-02	1.1E-03	1.0E+00	8.9E-02	1.7E-02	1.5E-02	-1.4E-01	2.0E-02	1.6E-02
352	395300	3751300	1.0E+00	6.0E-02	9.1E-04	8.3E-01	7.4E-02	1.6E-02	1.3E-02	-1.7E-01	1.3E-02	1.5E-02
353	395400	3751300	8.9E-01	5.3E-02	7.7E-04	7.0E-01	6.2E-02	1.4E-02	1.2E-02	-1.9E-01	9.2E-03	1.3E-02
354	392800	3751400	1.8E+00	1.2E-01	1.2E-03	7.7E-01	6.3E-02	1.2E-02	2.1E-02	-1.0E+00	-5.6E-02	1.1E-02
355	392900	3751400	2.1E+00	1.4E-01	1.4E-03	8.9E-01	7.4E-02	1.3E-02	2.4E-02	-1.2E+00	-6.6E-02	1.2E-02
356	393000	3751400	2.4E+00	1.7E-01	1.7E-03	1.0E+00	8.7E-02	1.5E-02	2.8E-02	-1.4E+00	-8.0E-02	1.3E-02
357	393100	3751400	2.9E+00	2.0E-01	2.0E-03	1.2E+00	1.0E-01	1.7E-02	3.3E-02	-1.7E+00	-1.0E-01	1.5E-02
358	393200	3751400	3.6E+00	2.6E-01	2.4E-03	1.5E+00	1.3E-01	2.1E-02	4.1E-02	-2.1E+00	-1.3E-01	1.8E-02
359	393300	3751400	4.5E+00	3.4E-01	3.0E-03	1.9E+00	1.6E-01	2.6E-02	5.1E-02	-2.7E+00	-1.8E-01	2.3E-02
360	393400	3751400	6.3E+00	4.9E-01	3.8E-03	2.4E+00	2.2E-01	3.5E-02	6.9E-02	-3.9E+00	-2.7E-01	3.1E-02
361	393500	3751400	9.7E+00	7.7E-01	4.9E-03	3.2E+00	3.1E-01	5.0E-02	9.8E-02	-6.6E+00	-4.6E-01	4.5E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
362	394500	3751400	3.5E+00	2.4E-01	5.5E-03	6.2E+00	5.4E-01	4.3E-02	5.3E-02	2.8E+00	3.1E-01	3.7E-02
363	394600	3751400	2.7E+00	1.8E-01	3.8E-03	4.2E+00	3.7E-01	3.4E-02	4.1E-02	1.5E+00	1.9E-01	3.0E-02
364	394700	3751400	2.1E+00	1.4E-01	2.8E-03	2.9E+00	2.5E-01	2.8E-02	3.3E-02	7.9E-01	1.2E-01	2.5E-02
365	394800	3751400	1.7E+00	1.1E-01	2.1E-03	2.1E+00	1.8E-01	2.3E-02	2.7E-02	3.5E-01	7.3E-02	2.1E-02
366	394900	3751400	1.4E+00	9.0E-02	1.6E-03	1.5E+00	1.4E-01	2.0E-02	2.2E-02	1.1E-01	4.7E-02	1.8E-02
367	395000	3751400	1.2E+00	7.6E-02	1.3E-03	1.2E+00	1.1E-01	1.8E-02	1.9E-02	-3.1E-02	3.1E-02	1.6E-02
368	395100	3751400	1.1E+00	6.5E-02	1.0E-03	9.6E-01	8.5E-02	1.6E-02	1.7E-02	-1.1E-01	2.0E-02	1.5E-02
369	395200	3751400	9.4E-01	5.7E-02	8.6E-04	7.9E-01	7.0E-02	1.4E-02	1.5E-02	-1.5E-01	1.4E-02	1.4E-02
370	395300	3751400	8.4E-01	5.0E-02	7.3E-04	6.7E-01	5.9E-02	1.3E-02	1.3E-02	-1.7E-01	9.4E-03	1.3E-02
371	395400	3751400	7.6E-01	4.4E-02	6.3E-04	5.8E-01	5.1E-02	1.2E-02	1.2E-02	-1.8E-01	6.4E-03	1.2E-02
372	392600	3751500	1.4E+00	9.0E-02	9.6E-04	6.1E-01	4.9E-02	1.1E-02	1.6E-02	-7.9E-01	-4.1E-02	9.8E-03
373	392700	3751500	1.6E+00	1.0E-01	1.1E-03	6.8E-01	5.5E-02	1.1E-02	1.8E-02	-8.9E-01	-4.7E-02	1.0E-02
374	392800	3751500	1.8E+00	1.2E-01	1.3E-03	7.8E-01	6.4E-02	1.2E-02	2.0E-02	-1.0E+00	-5.4E-02	1.1E-02
375	392900	3751500	2.1E+00	1.4E-01	1.5E-03	9.0E-01	7.5E-02	1.3E-02	2.3E-02	-1.2E+00	-6.4E-02	1.2E-02
376	393000	3751500	2.4E+00	1.7E-01	1.7E-03	1.1E+00	8.9E-02	1.5E-02	2.7E-02	-1.4E+00	-7.8E-02	1.3E-02
377	393100	3751500	2.9E+00	2.0E-01	2.1E-03	1.3E+00	1.1E-01	1.7E-02	3.2E-02	-1.6E+00	-9.6E-02	1.5E-02
378	393200	3751500	3.6E+00	2.6E-01	2.6E-03	1.6E+00	1.4E-01	2.1E-02	3.9E-02	-2.0E+00	-1.2E-01	1.8E-02
379	393300	3751500	4.7E+00	3.5E-01	3.4E-03	2.1E+00	1.8E-01	2.7E-02	5.0E-02	-2.6E+00	-1.7E-01	2.3E-02
380	393400	3751500	6.7E+00	5.2E-01	4.6E-03	2.9E+00	2.7E-01	3.6E-02	6.6E-02	-3.8E+00	-2.5E-01	3.1E-02
381	393500	3751500	1.1E+01	9.0E-01	7.1E-03	4.7E+00	4.9E-01	5.3E-02	9.7E-02	-6.6E+00	-4.1E-01	4.6E-02
382	394500	3751500	2.4E+00	1.6E-01	3.7E-03	4.8E+00	4.2E-01	3.1E-02	5.1E-02	2.4E+00	2.6E-01	2.8E-02
383	394600	3751500	1.9E+00	1.3E-01	2.6E-03	3.0E+00	2.6E-01	2.5E-02	4.1E-02	1.0E+00	1.3E-01	2.3E-02
384	394700	3751500	1.6E+00	1.0E-01	1.9E-03	2.0E+00	1.8E-01	2.1E-02	3.3E-02	4.4E-01	7.7E-02	1.9E-02
385	394800	3751500	1.3E+00	8.3E-02	1.5E-03	1.5E+00	1.3E-01	1.8E-02	2.7E-02	1.5E-01	4.7E-02	1.7E-02
386	394900	3751500	1.1E+00	7.0E-02	1.2E-03	1.1E+00	1.0E-01	1.6E-02	2.2E-02	-3.7E-03	3.0E-02	1.5E-02
387	395000	3751500	9.9E-01	6.1E-02	9.6E-04	9.1E-01	8.1E-02	1.5E-02	1.9E-02	-8.6E-02	2.0E-02	1.4E-02
388	395100	3751500	8.8E-01	5.3E-02	8.0E-04	7.5E-01	6.7E-02	1.3E-02	1.7E-02	-1.3E-01	1.4E-02	1.2E-02
389	395200	3751500	7.9E-01	4.7E-02	6.8E-04	6.4E-01	5.6E-02	1.2E-02	1.5E-02	-1.5E-01	9.4E-03	1.2E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
390	395300	3751500	7.1E-01	4.2E-02	5.9E-04	5.5E-01	4.8E-02	1.1E-02	1.3E-02	-1.7E-01	6.4E-03	1.1E-02
391	395400	3751500	6.5E-01	3.8E-02	5.2E-04	4.8E-01	4.2E-02	1.1E-02	1.2E-02	-1.7E-01	4.3E-03	1.0E-02
392	392800	3751600	1.7E+00	1.1E-01	1.2E-03	7.6E-01	6.2E-02	1.2E-02	2.0E-02	-9.8E-01	-5.3E-02	1.0E-02
393	392900	3751600	2.0E+00	1.3E-01	1.4E-03	8.8E-01	7.3E-02	1.3E-02	2.2E-02	-1.1E+00	-6.2E-02	1.1E-02
394	393000	3751600	2.4E+00	1.6E-01	1.7E-03	1.0E+00	8.7E-02	1.4E-02	2.6E-02	-1.3E+00	-7.4E-02	1.3E-02
395	393100	3751600	2.8E+00	2.0E-01	2.1E-03	1.2E+00	1.1E-01	1.6E-02	3.1E-02	-1.6E+00	-9.1E-02	1.4E-02
396	393200	3751600	3.5E+00	2.5E-01	2.6E-03	1.6E+00	1.3E-01	2.0E-02	3.8E-02	-1.9E+00	-1.1E-01	1.7E-02
397	393300	3751600	4.4E+00	3.3E-01	3.3E-03	2.0E+00	1.8E-01	2.5E-02	4.8E-02	-2.4E+00	-1.5E-01	2.2E-02
398	393400	3751600	6.1E+00	4.7E-01	4.7E-03	2.9E+00	2.7E-01	3.4E-02	6.2E-02	-3.2E+00	-2.0E-01	2.9E-02
399	393500	3751600	9.8E+00	7.6E-01	7.7E-03	5.0E+00	5.3E-01	4.9E-02	8.6E-02	-4.7E+00	-2.3E-01	4.1E-02
400	394500	3751600	1.7E+00	1.1E-01	2.2E-03	2.8E+00	2.5E-01	2.4E-02	4.9E-02	1.1E+00	1.3E-01	2.2E-02
401	394600	3751600	1.4E+00	9.1E-02	1.6E-03	1.8E+00	1.6E-01	2.0E-02	3.9E-02	4.1E-01	7.1E-02	1.8E-02
402	394700	3751600	1.2E+00	7.6E-02	1.3E-03	1.3E+00	1.2E-01	1.7E-02	3.1E-02	1.3E-01	4.3E-02	1.6E-02
403	394800	3751600	1.0E+00	6.5E-02	1.0E-03	1.0E+00	9.3E-02	1.5E-02	2.6E-02	-1.4E-03	2.8E-02	1.4E-02
404	394900	3751600	9.2E-01	5.6E-02	8.7E-04	8.5E-01	7.5E-02	1.3E-02	2.2E-02	-7.6E-02	1.9E-02	1.2E-02
405	395000	3751600	8.2E-01	5.0E-02	7.4E-04	7.1E-01	6.3E-02	1.2E-02	1.9E-02	-1.2E-01	1.3E-02	1.1E-02
406	395100	3751600	7.4E-01	4.4E-02	6.4E-04	6.0E-01	5.3E-02	1.1E-02	1.6E-02	-1.4E-01	9.3E-03	1.1E-02
407	395200	3751600	6.8E-01	4.0E-02	5.5E-04	5.2E-01	4.6E-02	1.1E-02	1.4E-02	-1.5E-01	6.4E-03	1.0E-02
408	395300	3751600	6.2E-01	3.6E-02	4.9E-04	4.6E-01	4.1E-02	9.9E-03	1.3E-02	-1.6E-01	4.4E-03	9.5E-03
409	395400	3751600	5.7E-01	3.3E-02	4.4E-04	4.1E-01	3.6E-02	9.4E-03	1.2E-02	-1.6E-01	2.9E-03	9.0E-03
410	392800	3751700	1.7E+00	1.1E-01	1.2E-03	7.4E-01	6.0E-02	1.1E-02	2.0E-02	-9.6E-01	-5.1E-02	1.0E-02
411	392900	3751700	1.9E+00	1.3E-01	1.4E-03	8.5E-01	7.0E-02	1.2E-02	2.3E-02	-1.1E+00	-5.9E-02	1.1E-02
412	393000	3751700	2.3E+00	1.5E-01	1.6E-03	9.9E-01	8.2E-02	1.4E-02	2.6E-02	-1.3E+00	-7.0E-02	1.2E-02
413	393100	3751700	2.7E+00	1.8E-01	2.0E-03	1.2E+00	1.0E-01	1.6E-02	3.0E-02	-1.5E+00	-8.4E-02	1.4E-02
414	393200	3751700	3.2E+00	2.3E-01	2.4E-03	1.5E+00	1.3E-01	1.9E-02	3.5E-02	-1.8E+00	-1.0E-01	1.6E-02
415	393300	3751700	4.0E+00	2.9E-01	3.1E-03	1.9E+00	1.7E-01	2.3E-02	4.3E-02	-2.1E+00	-1.3E-01	2.0E-02
416	393400	3751700	5.2E+00	3.9E-01	4.3E-03	2.6E+00	2.4E-01	3.0E-02	5.4E-02	-2.6E+00	-1.5E-01	2.6E-02
417	393500	3751700	7.5E+00	5.8E-01	6.4E-03	4.3E+00	4.9E-01	4.2E-02	7.6E-02	-3.2E+00	-9.5E-02	3.5E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
418	393800	3751700	1.3E+01	1.0E+00	1.5E-02	1.6E+01	1.8E+00	1.5E-01	1.4E-01	2.7E+00	7.8E-01	1.3E-01
419	393900	3751700	9.5E+00	7.1E-01	1.3E-02	1.1E+01	1.2E+00	1.7E-01	1.4E-01	1.4E+00	4.4E-01	1.6E-01
420	394000	3751700	7.3E+00	5.2E-01	1.3E-02	1.1E+01	1.0E+00	1.5E-01	1.2E-01	4.0E+00	5.2E-01	1.4E-01
421	394400	3751700	1.6E+00	1.0E-01	1.9E-03	2.6E+00	2.3E-01	2.6E-02	5.5E-02	9.6E-01	1.2E-01	2.4E-02
422	394500	3751700	1.3E+00	8.4E-02	1.4E-03	1.7E+00	1.5E-01	2.0E-02	4.7E-02	3.5E-01	6.3E-02	1.9E-02
423	394600	3751700	1.1E+00	7.0E-02	1.1E-03	1.2E+00	1.1E-01	1.6E-02	3.8E-02	1.2E-01	4.0E-02	1.5E-02
424	394700	3751700	9.8E-01	6.0E-02	9.4E-04	9.8E-01	8.7E-02	1.4E-02	3.0E-02	1.3E-03	2.7E-02	1.3E-02
425	394800	3751700	8.7E-01	5.3E-02	7.9E-04	8.0E-01	7.1E-02	1.3E-02	2.5E-02	-6.7E-02	1.8E-02	1.2E-02
426	394900	3751700	7.8E-01	4.7E-02	6.8E-04	6.7E-01	6.0E-02	1.1E-02	2.1E-02	-1.1E-01	1.3E-02	1.1E-02
427	395000	3751700	7.0E-01	4.2E-02	5.9E-04	5.8E-01	5.1E-02	1.0E-02	1.8E-02	-1.3E-01	9.2E-03	9.8E-03
428	395100	3751700	6.4E-01	3.8E-02	5.2E-04	5.0E-01	4.4E-02	9.8E-03	1.6E-02	-1.4E-01	6.5E-03	9.2E-03
429	395200	3751700	5.9E-01	3.4E-02	4.6E-04	4.4E-01	3.9E-02	9.2E-03	1.4E-02	-1.5E-01	4.6E-03	8.7E-03
430	395300	3751700	5.5E-01	3.2E-02	4.1E-04	3.9E-01	3.5E-02	8.7E-03	1.3E-02	-1.5E-01	3.1E-03	8.3E-03
431	395400	3751700	5.1E-01	2.9E-02	3.7E-04	3.6E-01	3.1E-02	8.4E-03	1.2E-02	-1.5E-01	2.0E-03	8.0E-03
432	392600	3751800	1.3E+00	8.3E-02	9.0E-04	5.7E-01	4.5E-02	1.0E-02	1.6E-02	-7.4E-01	-3.8E-02	9.2E-03
433	392700	3751800	1.5E+00	9.3E-02	1.0E-03	6.3E-01	5.0E-02	1.1E-02	1.7E-02	-8.2E-01	-4.3E-02	9.5E-03
434	392800	3751800	1.6E+00	1.1E-01	1.2E-03	7.1E-01	5.7E-02	1.1E-02	1.9E-02	-9.2E-01	-4.9E-02	9.9E-03
435	392900	3751800	1.9E+00	1.2E-01	1.3E-03	8.1E-01	6.6E-02	1.2E-02	2.1E-02	-1.0E+00	-5.6E-02	1.1E-02
436	393000	3751800	2.1E+00	1.4E-01	1.6E-03	9.5E-01	7.8E-02	1.3E-02	2.4E-02	-1.2E+00	-6.5E-02	1.2E-02
437	393100	3751800	2.5E+00	1.7E-01	1.9E-03	1.1E+00	9.4E-02	1.5E-02	2.8E-02	-1.4E+00	-7.7E-02	1.3E-02
438	393200	3751800	3.0E+00	2.1E-01	2.3E-03	1.4E+00	1.2E-01	1.7E-02	3.2E-02	-1.6E+00	-9.0E-02	1.5E-02
439	393300	3751800	3.6E+00	2.6E-01	2.8E-03	1.7E+00	1.5E-01	2.1E-02	3.9E-02	-1.9E+00	-1.0E-01	1.8E-02
440	393400	3751800	4.5E+00	3.3E-01	3.7E-03	2.3E+00	2.2E-01	2.7E-02	5.0E-02	-2.1E+00	-1.1E-01	2.3E-02
441	393500	3751800	5.8E+00	4.4E-01	5.0E-03	3.5E+00	3.9E-01	3.6E-02	6.2E-02	-2.4E+00	-5.2E-02	3.0E-02
442	393600	3751800	8.1E+00	6.1E-01	7.1E-03	5.4E+00	7.1E-01	5.1E-02	7.3E-02	-2.7E+00	9.9E-02	4.4E-02
443	393700	3751800	9.9E+00	7.2E-01	9.0E-03	7.3E+00	9.5E-01	8.1E-02	8.3E-02	-2.6E+00	2.3E-01	7.2E-02
444	393800	3751800	9.1E+00	6.6E-01	9.3E-03	8.3E+00	9.8E-01	1.2E-01	8.9E-02	-7.2E-01	3.1E-01	1.1E-01
445	393900	3751800	7.1E+00	5.1E-01	8.7E-03	7.8E+00	8.1E-01	1.3E-01	9.1E-02	6.6E-01	3.0E-01	1.2E-01

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
446	394000	3751800	5.5E+00	3.8E-01	8.1E-03	7.4E+00	6.8E-01	1.2E-01	8.6E-02	2.0E+00	3.0E-01	1.2E-01
447	394400	3751800	1.4E+00	8.7E-02	1.5E-03	2.0E+00	1.7E-01	2.5E-02	4.9E-02	5.6E-01	8.3E-02	2.4E-02
448	394500	3751800	1.1E+00	6.9E-02	1.1E-03	1.3E+00	1.1E-01	1.9E-02	4.0E-02	1.7E-01	4.3E-02	1.8E-02
449	394600	3751800	9.4E-01	5.8E-02	8.8E-04	9.7E-01	8.6E-02	1.5E-02	3.3E-02	2.3E-02	2.7E-02	1.4E-02
450	394700	3751800	8.3E-01	5.1E-02	7.4E-04	7.8E-01	6.9E-02	1.3E-02	2.9E-02	-4.7E-02	1.9E-02	1.2E-02
451	394800	3751800	7.4E-01	4.5E-02	6.4E-04	6.5E-01	5.8E-02	1.1E-02	2.5E-02	-8.9E-02	1.3E-02	1.0E-02
452	394900	3751800	6.7E-01	4.0E-02	5.6E-04	5.6E-01	5.0E-02	1.0E-02	2.1E-02	-1.1E-01	9.5E-03	9.4E-03
453	395000	3751800	6.1E-01	3.6E-02	4.9E-04	4.9E-01	4.3E-02	9.2E-03	1.8E-02	-1.3E-01	6.8E-03	8.7E-03
454	395100	3751800	5.6E-01	3.3E-02	4.4E-04	4.3E-01	3.8E-02	8.6E-03	1.5E-02	-1.4E-01	4.8E-03	8.2E-03
455	395200	3751800	5.2E-01	3.0E-02	3.9E-04	3.8E-01	3.4E-02	8.2E-03	1.4E-02	-1.4E-01	3.3E-03	7.8E-03
456	395300	3751800	4.9E-01	2.8E-02	3.6E-04	3.4E-01	3.0E-02	7.8E-03	1.3E-02	-1.4E-01	2.2E-03	7.4E-03
457	395400	3751800	4.5E-01	2.6E-02	3.2E-04	3.1E-01	2.7E-02	7.5E-03	1.1E-02	-1.4E-01	1.4E-03	7.2E-03
458	392400	3751900	1.1E+00	6.5E-02	7.0E-04	4.6E-01	3.5E-02	9.6E-03	1.3E-02	-6.0E-01	-3.0E-02	8.9E-03
459	392800	3751900	1.6E+00	1.0E-01	1.1E-03	6.9E-01	5.5E-02	1.1E-02	1.8E-02	-8.9E-01	-4.6E-02	9.8E-03
460	392900	3751900	1.8E+00	1.2E-01	1.3E-03	7.8E-01	6.3E-02	1.2E-02	2.0E-02	-1.0E+00	-5.2E-02	1.0E-02
461	393000	3751900	2.0E+00	1.3E-01	1.5E-03	9.0E-01	7.4E-02	1.3E-02	2.2E-02	-1.1E+00	-6.0E-02	1.1E-02
462	393100	3751900	2.3E+00	1.6E-01	1.7E-03	1.1E+00	8.9E-02	1.4E-02	2.5E-02	-1.3E+00	-6.8E-02	1.2E-02
463	393200	3751900	2.7E+00	1.9E-01	2.1E-03	1.3E+00	1.1E-01	1.6E-02	3.1E-02	-1.5E+00	-7.6E-02	1.4E-02
464	393300	3751900	3.2E+00	2.3E-01	2.5E-03	1.6E+00	1.4E-01	1.9E-02	3.7E-02	-1.6E+00	-8.2E-02	1.7E-02
465	393400	3751900	3.9E+00	2.8E-01	3.2E-03	2.1E+00	2.0E-01	2.4E-02	4.3E-02	-1.8E+00	-7.7E-02	2.1E-02
466	393500	3751900	4.8E+00	3.5E-01	4.0E-03	2.8E+00	3.1E-01	3.1E-02	5.0E-02	-2.0E+00	-3.8E-02	2.7E-02
467	393600	3751900	5.9E+00	4.3E-01	5.1E-03	3.9E+00	4.7E-01	4.4E-02	5.3E-02	-2.0E+00	4.5E-02	3.9E-02
468	393700	3751900	6.7E+00	4.8E-01	6.0E-03	5.0E+00	6.1E-01	6.5E-02	6.1E-02	-1.8E+00	1.3E-01	5.9E-02
469	393800	3751900	6.5E+00	4.6E-01	6.4E-03	5.6E+00	6.5E-01	8.9E-02	6.4E-02	-8.9E-01	1.9E-01	8.2E-02
470	393900	3751900	5.4E+00	3.8E-01	6.1E-03	5.6E+00	5.8E-01	1.0E-01	6.6E-02	1.8E-01	2.0E-01	9.6E-02
471	394000	3751900	4.3E+00	2.9E-01	5.4E-03	5.4E+00	5.0E-01	9.8E-02	6.4E-02	1.1E+00	2.1E-01	9.3E-02
472	394800	3751900	6.6E-01	3.9E-02	5.4E-04	5.6E-01	5.0E-02	1.0E-02	2.2E-02	-9.9E-02	1.0E-02	9.7E-03
473	394900	3751900	6.0E-01	3.5E-02	4.7E-04	4.8E-01	4.3E-02	9.2E-03	2.0E-02	-1.2E-01	7.4E-03	8.7E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
474	395000	3751900	5.5E-01	3.2E-02	4.2E-04	4.2E-01	3.7E-02	8.4E-03	1.8E-02	-1.3E-01	5.2E-03	8.0E-03
475	395100	3751900	5.1E-01	2.9E-02	3.8E-04	3.7E-01	3.3E-02	7.8E-03	1.6E-02	-1.3E-01	3.7E-03	7.5E-03
476	395200	3751900	4.7E-01	2.7E-02	3.4E-04	3.4E-01	3.0E-02	7.4E-03	1.4E-02	-1.3E-01	2.5E-03	7.1E-03
477	395300	3751900	4.4E-01	2.5E-02	3.1E-04	3.1E-01	2.7E-02	7.1E-03	1.2E-02	-1.3E-01	1.6E-03	6.8E-03
478	395400	3751900	4.1E-01	2.3E-02	2.9E-04	2.8E-01	2.4E-02	6.8E-03	1.1E-02	-1.3E-01	9.0E-04	6.5E-03
479	392400	3752000	1.0E+00	6.3E-02	6.8E-04	4.5E-01	3.4E-02	9.5E-03	1.1E-02	-5.9E-01	-2.9E-02	8.8E-03
480	392800	3752000	1.5E+00	9.6E-02	1.1E-03	6.6E-01	5.3E-02	1.1E-02	1.7E-02	-8.5E-01	-4.3E-02	9.7E-03
481	392900	3752000	1.7E+00	1.1E-01	1.2E-03	7.5E-01	6.1E-02	1.1E-02	1.8E-02	-9.4E-01	-4.8E-02	1.0E-02
482	393000	3752000	1.9E+00	1.2E-01	1.4E-03	8.6E-01	7.1E-02	1.2E-02	2.1E-02	-1.0E+00	-5.3E-02	1.1E-02
483	393100	3752000	2.2E+00	1.4E-01	1.6E-03	9.9E-01	8.4E-02	1.3E-02	2.5E-02	-1.2E+00	-5.9E-02	1.2E-02
484	393200	3752000	2.5E+00	1.7E-01	1.9E-03	1.2E+00	1.0E-01	1.5E-02	2.9E-02	-1.3E+00	-6.4E-02	1.3E-02
485	393300	3752000	2.9E+00	2.0E-01	2.2E-03	1.4E+00	1.3E-01	1.8E-02	3.2E-02	-1.5E+00	-6.6E-02	1.5E-02
486	393400	3752000	3.4E+00	2.4E-01	2.7E-03	1.8E+00	1.8E-01	2.2E-02	3.7E-02	-1.6E+00	-5.9E-02	1.9E-02
487	393500	3752000	4.0E+00	2.8E-01	3.3E-03	2.3E+00	2.5E-01	2.8E-02	3.9E-02	-1.7E+00	-3.0E-02	2.5E-02
488	393600	3752000	4.6E+00	3.2E-01	3.9E-03	3.0E+00	3.5E-01	3.8E-02	4.3E-02	-1.6E+00	2.3E-02	3.4E-02
489	393700	3752000	5.0E+00	3.5E-01	4.4E-03	3.6E+00	4.3E-01	5.3E-02	4.7E-02	-1.3E+00	8.3E-02	4.9E-02
490	393800	3752000	4.9E+00	3.4E-01	4.6E-03	4.1E+00	4.6E-01	6.9E-02	4.9E-02	-7.9E-01	1.2E-01	6.4E-02
491	393900	3752000	4.3E+00	2.9E-01	4.4E-03	4.2E+00	4.4E-01	7.9E-02	5.0E-02	-6.7E-02	1.4E-01	7.5E-02
492	394000	3752000	3.5E+00	2.3E-01	3.9E-03	4.0E+00	3.8E-01	7.8E-02	5.0E-02	5.4E-01	1.5E-01	7.4E-02
493	394800	3752000	6.0E-01	3.5E-02	4.7E-04	5.0E-01	4.4E-02	9.9E-03	2.0E-02	-1.0E-01	8.7E-03	9.4E-03
494	394900	3752000	5.4E-01	3.2E-02	4.1E-04	4.3E-01	3.8E-02	8.7E-03	1.8E-02	-1.1E-01	6.1E-03	8.3E-03
495	395000	3752000	5.0E-01	2.9E-02	3.7E-04	3.8E-01	3.3E-02	7.9E-03	1.6E-02	-1.2E-01	4.3E-03	7.5E-03
496	395100	3752000	4.6E-01	2.7E-02	3.3E-04	3.4E-01	2.9E-02	7.3E-03	1.5E-02	-1.3E-01	2.9E-03	7.0E-03
497	395200	3752000	4.3E-01	2.5E-02	3.0E-04	3.0E-01	2.6E-02	6.9E-03	1.4E-02	-1.3E-01	1.9E-03	6.6E-03
498	395300	3752000	4.0E-01	2.3E-02	2.8E-04	2.8E-01	2.4E-02	6.6E-03	1.3E-02	-1.3E-01	1.2E-03	6.3E-03
499	395400	3752000	3.8E-01	2.1E-02	2.6E-04	2.5E-01	2.2E-02	6.3E-03	1.1E-02	-1.3E-01	5.6E-04	6.1E-03
500	392400	3752100	1.0E+00	6.1E-02	6.7E-04	4.4E-01	3.3E-02	9.5E-03	1.1E-02	-5.7E-01	-2.8E-02	8.8E-03
501	392500	3752100	1.1E+00	6.7E-02	7.3E-04	4.7E-01	3.6E-02	9.7E-03	1.2E-02	-6.2E-01	-3.1E-02	8.9E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
502	392600	3752100	1.2E+00	7.4E-02	8.1E-04	5.2E-01	4.0E-02	9.9E-03	1.3E-02	-6.7E-01	-3.3E-02	9.1E-03
503	392700	3752100	1.3E+00	8.2E-02	9.0E-04	5.7E-01	4.5E-02	1.0E-02	1.4E-02	-7.3E-01	-3.7E-02	9.3E-03
504	392800	3752100	1.4E+00	9.1E-02	1.0E-03	6.4E-01	5.1E-02	1.1E-02	1.6E-02	-8.0E-01	-4.0E-02	9.6E-03
505	392900	3752100	1.6E+00	1.0E-01	1.1E-03	7.1E-01	5.8E-02	1.1E-02	1.8E-02	-8.7E-01	-4.3E-02	1.0E-02
506	393000	3752100	1.8E+00	1.1E-01	1.3E-03	8.1E-01	6.7E-02	1.2E-02	2.1E-02	-9.6E-01	-4.7E-02	1.1E-02
507	393100	3752100	2.0E+00	1.3E-01	1.5E-03	9.3E-01	7.9E-02	1.3E-02	2.3E-02	-1.1E+00	-5.1E-02	1.1E-02
508	393200	3752100	2.3E+00	1.5E-01	1.7E-03	1.1E+00	9.6E-02	1.4E-02	2.6E-02	-1.2E+00	-5.4E-02	1.3E-02
509	393300	3752100	2.6E+00	1.7E-01	2.0E-03	1.3E+00	1.2E-01	1.7E-02	2.9E-02	-1.3E+00	-5.3E-02	1.5E-02
510	393400	3752100	3.0E+00	2.0E-01	2.3E-03	1.6E+00	1.6E-01	2.0E-02	3.0E-02	-1.4E+00	-4.6E-02	1.8E-02
511	393500	3752100	3.4E+00	2.3E-01	2.7E-03	1.9E+00	2.1E-01	2.5E-02	3.2E-02	-1.4E+00	-2.4E-02	2.3E-02
512	393600	3752100	3.7E+00	2.6E-01	3.1E-03	2.4E+00	2.7E-01	3.3E-02	3.6E-02	-1.3E+00	1.3E-02	3.0E-02
513	393700	3752100	3.9E+00	2.7E-01	3.4E-03	2.8E+00	3.2E-01	4.4E-02	3.7E-02	-1.1E+00	5.4E-02	4.0E-02
514	393800	3752100	3.8E+00	2.6E-01	3.5E-03	3.1E+00	3.4E-01	5.4E-02	3.9E-02	-6.8E-01	8.6E-02	5.1E-02
515	393900	3752100	3.4E+00	2.3E-01	3.4E-03	3.2E+00	3.3E-01	6.2E-02	4.0E-02	-1.9E-01	1.0E-01	5.9E-02
516	394000	3752100	2.9E+00	1.9E-01	3.0E-03	3.1E+00	3.0E-01	6.3E-02	4.0E-02	2.2E-01	1.1E-01	6.0E-02
517	394800	3752100	5.6E-01	3.3E-02	4.3E-04	4.6E-01	4.1E-02	9.7E-03	1.8E-02	-1.0E-01	7.9E-03	9.3E-03
518	394900	3752100	5.0E-01	2.9E-02	3.7E-04	3.9E-01	3.5E-02	8.5E-03	1.7E-02	-1.1E-01	5.4E-03	8.1E-03
519	395000	3752100	4.6E-01	2.7E-02	3.3E-04	3.4E-01	3.0E-02	7.6E-03	1.5E-02	-1.2E-01	3.7E-03	7.3E-03
520	395100	3752100	4.3E-01	2.4E-02	3.0E-04	3.1E-01	2.7E-02	7.0E-03	1.4E-02	-1.2E-01	2.5E-03	6.7E-03
521	395200	3752100	4.0E-01	2.3E-02	2.7E-04	2.8E-01	2.4E-02	6.6E-03	1.3E-02	-1.2E-01	1.6E-03	6.3E-03
522	395300	3752100	3.7E-01	2.1E-02	2.5E-04	2.5E-01	2.2E-02	6.2E-03	1.2E-02	-1.2E-01	8.8E-04	6.0E-03
523	395400	3752100	3.5E-01	2.0E-02	2.3E-04	2.3E-01	2.0E-02	6.0E-03	1.1E-02	-1.2E-01	3.3E-04	5.8E-03
524	392400	3752200	9.8E-01	5.9E-02	6.5E-04	4.3E-01	3.2E-02	9.5E-03	1.1E-02	-5.5E-01	-2.7E-02	8.9E-03
525	392500	3752200	1.1E+00	6.5E-02	7.1E-04	4.6E-01	3.5E-02	9.7E-03	1.2E-02	-6.0E-01	-2.9E-02	9.0E-03
526	392600	3752200	1.2E+00	7.1E-02	7.8E-04	5.0E-01	3.9E-02	1.0E-02	1.2E-02	-6.5E-01	-3.2E-02	9.2E-03
527	392700	3752200	1.3E+00	7.8E-02	8.6E-04	5.5E-01	4.4E-02	1.0E-02	1.3E-02	-7.0E-01	-3.4E-02	9.3E-03
528	392800	3752200	1.4E+00	8.5E-02	9.5E-04	6.1E-01	4.9E-02	1.0E-02	1.6E-02	-7.5E-01	-3.7E-02	9.5E-03
529	392900	3752200	1.5E+00	9.5E-02	1.1E-03	6.8E-01	5.5E-02	1.1E-02	1.8E-02	-8.2E-01	-3.9E-02	9.8E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
530	393000	3752200	1.6E+00	1.1E-01	1.2E-03	7.6E-01	6.4E-02	1.2E-02	1.9E-02	-8.9E-01	-4.2E-02	1.0E-02
531	393100	3752200	1.8E+00	1.2E-01	1.3E-03	8.6E-01	7.4E-02	1.2E-02	2.1E-02	-9.7E-01	-4.4E-02	1.1E-02
532	393200	3752200	2.1E+00	1.3E-01	1.5E-03	9.9E-01	8.8E-02	1.4E-02	2.4E-02	-1.1E+00	-4.6E-02	1.2E-02
533	393300	3752200	2.3E+00	1.5E-01	1.8E-03	1.2E+00	1.1E-01	1.6E-02	2.4E-02	-1.2E+00	-4.4E-02	1.4E-02
534	393400	3752200	2.6E+00	1.7E-01	2.0E-03	1.4E+00	1.4E-01	1.9E-02	2.5E-02	-1.2E+00	-3.7E-02	1.7E-02
535	393500	3752200	2.9E+00	1.9E-01	2.3E-03	1.7E+00	1.7E-01	2.3E-02	2.7E-02	-1.2E+00	-1.9E-02	2.1E-02
536	393600	3752200	3.1E+00	2.1E-01	2.5E-03	2.0E+00	2.1E-01	2.9E-02	2.9E-02	-1.1E+00	7.5E-03	2.7E-02
537	393700	3752200	3.1E+00	2.1E-01	2.7E-03	2.3E+00	2.5E-01	3.7E-02	3.1E-02	-8.9E-01	3.8E-02	3.4E-02
538	393800	3752200	3.1E+00	2.1E-01	2.8E-03	2.5E+00	2.7E-01	4.4E-02	3.2E-02	-5.9E-01	6.2E-02	4.1E-02
539	393900	3752200	2.8E+00	1.9E-01	2.6E-03	2.6E+00	2.6E-01	5.0E-02	3.2E-02	-2.6E-01	7.6E-02	4.7E-02
540	394000	3752200	2.4E+00	1.6E-01	2.4E-03	2.5E+00	2.4E-01	5.1E-02	3.2E-02	2.6E-02	7.9E-02	4.9E-02
541	394400	3752200	1.0E+00	6.3E-02	9.7E-04	1.2E+00	1.0E-01	2.4E-02	2.5E-02	1.1E-01	3.7E-02	2.3E-02
542	394500	3752200	8.5E-01	5.1E-02	7.4E-04	8.7E-01	7.6E-02	1.9E-02	2.3E-02	2.1E-02	2.5E-02	1.8E-02
543	394600	3752200	7.1E-01	4.2E-02	5.8E-04	6.6E-01	5.8E-02	1.4E-02	2.0E-02	-4.2E-02	1.6E-02	1.4E-02
544	394700	3752200	6.0E-01	3.5E-02	4.7E-04	5.3E-01	4.6E-02	1.2E-02	1.8E-02	-7.8E-02	1.1E-02	1.1E-02
545	394800	3752200	5.3E-01	3.1E-02	4.0E-04	4.3E-01	3.8E-02	9.7E-03	1.7E-02	-9.6E-02	7.4E-03	9.3E-03
546	394900	3752200	4.8E-01	2.7E-02	3.4E-04	3.7E-01	3.3E-02	8.4E-03	1.5E-02	-1.1E-01	5.1E-03	8.1E-03
547	395000	3752200	4.3E-01	2.5E-02	3.1E-04	3.2E-01	2.8E-02	7.5E-03	1.4E-02	-1.1E-01	3.5E-03	7.2E-03
548	395100	3752200	4.0E-01	2.3E-02	2.8E-04	2.9E-01	2.5E-02	6.8E-03	1.3E-02	-1.1E-01	2.3E-03	6.6E-03
549	395200	3752200	3.7E-01	2.1E-02	2.5E-04	2.6E-01	2.2E-02	6.4E-03	1.2E-02	-1.2E-01	1.4E-03	6.1E-03
550	395300	3752200	3.5E-01	2.0E-02	2.3E-04	2.3E-01	2.0E-02	6.0E-03	1.1E-02	-1.1E-01	7.6E-04	5.8E-03
551	395400	3752200	3.3E-01	1.8E-02	2.1E-04	2.2E-01	1.9E-02	5.7E-03	1.0E-02	-1.1E-01	2.5E-04	5.5E-03
552	392400	3752300	9.5E-01	5.7E-02	6.3E-04	4.2E-01	3.1E-02	9.6E-03	1.0E-02	-5.4E-01	-2.6E-02	9.0E-03
553	392500	3752300	1.0E+00	6.2E-02	6.8E-04	4.5E-01	3.4E-02	9.7E-03	1.1E-02	-5.7E-01	-2.7E-02	9.0E-03
554	392600	3752300	1.1E+00	6.7E-02	7.4E-04	4.9E-01	3.8E-02	9.9E-03	1.2E-02	-6.1E-01	-2.9E-02	9.2E-03
555	392700	3752300	1.2E+00	7.3E-02	8.2E-04	5.3E-01	4.2E-02	1.0E-02	1.4E-02	-6.6E-01	-3.1E-02	9.3E-03
556	392800	3752300	1.3E+00	8.0E-02	9.0E-04	5.8E-01	4.7E-02	1.0E-02	1.5E-02	-7.1E-01	-3.3E-02	9.5E-03
557	392900	3752300	1.4E+00	8.8E-02	9.9E-04	6.4E-01	5.3E-02	1.1E-02	1.7E-02	-7.6E-01	-3.5E-02	9.7E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
558	393000	3752300	1.5E+00	9.7E-02	1.1E-03	7.1E-01	6.0E-02	1.1E-02	1.8E-02	-8.3E-01	-3.7E-02	1.0E-02
559	393100	3752300	1.7E+00	1.1E-01	1.2E-03	8.0E-01	6.9E-02	1.2E-02	2.0E-02	-8.9E-01	-3.9E-02	1.1E-02
560	393200	3752300	1.9E+00	1.2E-01	1.4E-03	9.1E-01	8.1E-02	1.3E-02	2.1E-02	-9.7E-01	-4.0E-02	1.2E-02
561	393300	3752300	2.1E+00	1.4E-01	1.6E-03	1.0E+00	9.8E-02	1.5E-02	2.1E-02	-1.0E+00	-3.7E-02	1.4E-02
562	393400	3752300	2.3E+00	1.5E-01	1.8E-03	1.2E+00	1.2E-01	1.8E-02	2.2E-02	-1.1E+00	-3.0E-02	1.6E-02
563	393500	3752300	2.5E+00	1.6E-01	2.0E-03	1.4E+00	1.5E-01	2.1E-02	2.4E-02	-1.0E+00	-1.6E-02	1.9E-02
564	393600	3752300	2.6E+00	1.7E-01	2.1E-03	1.6E+00	1.8E-01	2.6E-02	2.5E-02	-9.2E-01	4.4E-03	2.4E-02
565	393700	3752300	2.6E+00	1.7E-01	2.2E-03	1.9E+00	2.0E-01	3.1E-02	2.6E-02	-7.5E-01	2.7E-02	2.9E-02
566	393800	3752300	2.5E+00	1.7E-01	2.2E-03	2.0E+00	2.1E-01	3.7E-02	2.7E-02	-5.3E-01	4.6E-02	3.5E-02
567	393900	3752300	2.3E+00	1.5E-01	2.1E-03	2.1E+00	2.1E-01	4.1E-02	2.7E-02	-2.9E-01	5.7E-02	3.9E-02
568	394000	3752300	2.1E+00	1.4E-01	1.9E-03	2.0E+00	2.0E-01	4.2E-02	2.7E-02	-9.0E-02	6.0E-02	4.0E-02
569	394100	3752300	1.8E+00	1.1E-01	1.7E-03	1.8E+00	1.7E-01	4.0E-02	2.6E-02	3.9E-02	5.6E-02	3.8E-02
570	394200	3752300	1.5E+00	9.3E-02	1.4E-03	1.6E+00	1.4E-01	3.5E-02	2.5E-02	9.8E-02	4.9E-02	3.4E-02
571	394300	3752300	1.2E+00	7.5E-02	1.1E-03	1.3E+00	1.2E-01	2.9E-02	2.3E-02	9.6E-02	4.0E-02	2.8E-02
572	394400	3752300	9.9E-01	6.0E-02	8.8E-04	1.0E+00	9.0E-02	2.3E-02	2.2E-02	5.3E-02	3.1E-02	2.2E-02
573	394500	3752300	8.1E-01	4.8E-02	6.9E-04	8.1E-01	7.0E-02	1.8E-02	2.0E-02	-3.2E-03	2.2E-02	1.8E-02
574	394600	3752300	6.8E-01	4.0E-02	5.5E-04	6.3E-01	5.5E-02	1.5E-02	1.8E-02	-4.8E-02	1.5E-02	1.4E-02
575	394700	3752300	5.8E-01	3.4E-02	4.4E-04	5.0E-01	4.4E-02	1.2E-02	1.7E-02	-7.7E-02	1.0E-02	1.1E-02
576	394800	3752300	5.1E-01	2.9E-02	3.7E-04	4.1E-01	3.6E-02	9.8E-03	1.5E-02	-9.3E-02	7.1E-03	9.4E-03
577	394900	3752300	4.5E-01	2.6E-02	3.2E-04	3.5E-01	3.1E-02	8.4E-03	1.4E-02	-1.0E-01	4.9E-03	8.1E-03
578	395000	3752300	4.1E-01	2.3E-02	2.8E-04	3.0E-01	2.7E-02	7.5E-03	1.3E-02	-1.1E-01	3.4E-03	7.2E-03
579	395100	3752300	3.8E-01	2.1E-02	2.6E-04	2.7E-01	2.4E-02	6.8E-03	1.2E-02	-1.1E-01	2.2E-03	6.5E-03
580	395200	3752300	3.5E-01	2.0E-02	2.3E-04	2.4E-01	2.1E-02	6.2E-03	1.1E-02	-1.1E-01	1.4E-03	6.0E-03
581	395300	3752300	3.3E-01	1.8E-02	2.1E-04	2.2E-01	1.9E-02	5.9E-03	1.1E-02	-1.1E-01	7.3E-04	5.7E-03
582	395400	3752300	3.1E-01	1.7E-02	2.0E-04	2.0E-01	1.7E-02	5.6E-03	9.9E-03	-1.1E-01	2.2E-04	5.4E-03
583	392400	3752400	9.2E-01	5.5E-02	6.0E-04	4.0E-01	3.1E-02	9.6E-03	9.8E-03	-5.1E-01	-2.4E-02	9.0E-03
584	392500	3752400	9.8E-01	5.9E-02	6.5E-04	4.3E-01	3.3E-02	9.7E-03	1.1E-02	-5.5E-01	-2.6E-02	9.1E-03
585	392600	3752400	1.1E+00	6.4E-02	7.1E-04	4.7E-01	3.6E-02	9.9E-03	1.2E-02	-5.8E-01	-2.7E-02	9.1E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
586	392700	3752400	1.1E+00	6.9E-02	7.7E-04	5.1E-01	4.0E-02	1.0E-02	1.3E-02	-6.2E-01	-2.9E-02	9.3E-03
587	392800	3752400	1.2E+00	7.5E-02	8.4E-04	5.5E-01	4.4E-02	1.0E-02	1.4E-02	-6.7E-01	-3.0E-02	9.4E-03
588	392900	3752400	1.3E+00	8.2E-02	9.2E-04	6.0E-01	5.0E-02	1.1E-02	1.5E-02	-7.1E-01	-3.2E-02	9.7E-03
589	393000	3752400	1.4E+00	9.0E-02	1.0E-03	6.7E-01	5.6E-02	1.1E-02	1.7E-02	-7.7E-01	-3.4E-02	1.0E-02
590	393100	3752400	1.6E+00	9.9E-02	1.1E-03	7.4E-01	6.4E-02	1.2E-02	1.8E-02	-8.3E-01	-3.5E-02	1.1E-02
591	393200	3752400	1.7E+00	1.1E-01	1.3E-03	8.4E-01	7.5E-02	1.3E-02	1.7E-02	-8.8E-01	-3.5E-02	1.2E-02
592	393300	3752400	1.9E+00	1.2E-01	1.4E-03	9.5E-01	8.9E-02	1.5E-02	1.8E-02	-9.2E-01	-3.2E-02	1.3E-02
593	393400	3752400	2.0E+00	1.3E-01	1.5E-03	1.1E+00	1.1E-01	1.7E-02	2.0E-02	-9.3E-01	-2.5E-02	1.5E-02
594	393500	3752400	2.1E+00	1.4E-01	1.7E-03	1.2E+00	1.3E-01	2.0E-02	2.1E-02	-8.9E-01	-1.3E-02	1.8E-02
595	393600	3752400	2.2E+00	1.4E-01	1.8E-03	1.4E+00	1.5E-01	2.3E-02	2.1E-02	-8.0E-01	2.3E-03	2.2E-02
596	393700	3752400	2.2E+00	1.4E-01	1.9E-03	1.6E+00	1.6E-01	2.7E-02	2.2E-02	-6.5E-01	1.9E-02	2.5E-02
597	393800	3752400	2.1E+00	1.4E-01	1.8E-03	1.7E+00	1.7E-01	3.1E-02	2.3E-02	-4.8E-01	3.4E-02	2.9E-02
598	393900	3752400	2.0E+00	1.3E-01	1.8E-03	1.7E+00	1.7E-01	3.4E-02	2.3E-02	-3.1E-01	4.3E-02	3.3E-02
599	394000	3752400	1.8E+00	1.2E-01	1.6E-03	1.7E+00	1.6E-01	3.6E-02	2.3E-02	-1.6E-01	4.6E-02	3.4E-02
600	394100	3752400	1.6E+00	1.0E-01	1.4E-03	1.5E+00	1.4E-01	3.4E-02	2.2E-02	-5.5E-02	4.4E-02	3.3E-02
601	394200	3752400	1.3E+00	8.4E-02	1.2E-03	1.4E+00	1.2E-01	3.1E-02	2.1E-02	2.5E-03	3.9E-02	3.0E-02
602	394300	3752400	1.1E+00	6.9E-02	1.0E-03	1.1E+00	1.0E-01	2.7E-02	2.0E-02	2.0E-02	3.3E-02	2.6E-02
603	394400	3752400	9.4E-01	5.6E-02	8.1E-04	9.4E-01	8.2E-02	2.2E-02	1.9E-02	4.5E-03	2.6E-02	2.1E-02
604	394500	3752400	7.8E-01	4.6E-02	6.4E-04	7.5E-01	6.6E-02	1.8E-02	1.8E-02	-2.5E-02	1.9E-02	1.7E-02
605	394600	3752400	6.6E-01	3.8E-02	5.2E-04	6.0E-01	5.2E-02	1.4E-02	1.6E-02	-5.6E-02	1.4E-02	1.4E-02
606	394700	3752400	5.6E-01	3.3E-02	4.2E-04	4.8E-01	4.2E-02	1.2E-02	1.5E-02	-7.7E-02	9.8E-03	1.1E-02
607	394800	3752400	4.9E-01	2.8E-02	3.5E-04	4.0E-01	3.5E-02	9.9E-03	1.4E-02	-9.1E-02	6.9E-03	9.5E-03
608	394900	3752400	4.4E-01	2.5E-02	3.1E-04	3.4E-01	3.0E-02	8.5E-03	1.3E-02	-9.9E-02	4.8E-03	8.2E-03
609	395000	3752400	4.0E-01	2.2E-02	2.7E-04	2.9E-01	2.6E-02	7.5E-03	1.2E-02	-1.0E-01	3.3E-03	7.2E-03
610	395100	3752400	3.6E-01	2.0E-02	2.4E-04	2.6E-01	2.3E-02	6.7E-03	1.2E-02	-1.0E-01	2.2E-03	6.5E-03
611	395200	3752400	3.4E-01	1.9E-02	2.2E-04	2.3E-01	2.0E-02	6.2E-03	1.1E-02	-1.1E-01	1.4E-03	6.0E-03
612	395300	3752400	3.2E-01	1.7E-02	2.0E-04	2.1E-01	1.8E-02	5.8E-03	1.0E-02	-1.0E-01	7.8E-04	5.6E-03
613	395400	3752400	3.0E-01	1.6E-02	1.9E-04	1.9E-01	1.7E-02	5.5E-03	9.4E-03	-1.0E-01	2.9E-04	5.3E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
614	392400	3752500	8.8E-01	5.2E-02	5.8E-04	3.9E-01	3.0E-02	9.6E-03	1.0E-02	-4.9E-01	-2.3E-02	9.0E-03
615	392500	3752500	9.4E-01	5.6E-02	6.2E-04	4.2E-01	3.2E-02	9.7E-03	1.1E-02	-5.2E-01	-2.4E-02	9.0E-03
616	392600	3752500	1.0E+00	6.0E-02	6.7E-04	4.5E-01	3.5E-02	9.8E-03	1.2E-02	-5.5E-01	-2.5E-02	9.1E-03
617	392700	3752500	1.1E+00	6.5E-02	7.3E-04	4.8E-01	3.8E-02	1.0E-02	1.3E-02	-5.9E-01	-2.7E-02	9.3E-03
618	392800	3752500	1.2E+00	7.0E-02	7.9E-04	5.2E-01	4.2E-02	1.0E-02	1.3E-02	-6.3E-01	-2.8E-02	9.4E-03
619	392900	3752500	1.2E+00	7.6E-02	8.6E-04	5.7E-01	4.7E-02	1.1E-02	1.5E-02	-6.7E-01	-2.9E-02	9.7E-03
620	393000	3752500	1.3E+00	8.3E-02	9.4E-04	6.3E-01	5.3E-02	1.1E-02	1.5E-02	-7.2E-01	-3.1E-02	1.0E-02
621	393100	3752500	1.5E+00	9.1E-02	1.0E-03	6.9E-01	6.0E-02	1.2E-02	1.5E-02	-7.7E-01	-3.1E-02	1.1E-02
622	393200	3752500	1.6E+00	1.0E-01	1.1E-03	7.7E-01	6.9E-02	1.3E-02	1.6E-02	-8.1E-01	-3.0E-02	1.2E-02
623	393300	3752500	1.7E+00	1.1E-01	1.3E-03	8.7E-01	8.1E-02	1.4E-02	1.7E-02	-8.3E-01	-2.7E-02	1.3E-02
624	393400	3752500	1.8E+00	1.2E-01	1.4E-03	9.8E-01	9.4E-02	1.6E-02	1.8E-02	-8.2E-01	-2.1E-02	1.5E-02
625	393500	3752500	1.9E+00	1.2E-01	1.5E-03	1.1E+00	1.1E-01	1.9E-02	1.8E-02	-7.8E-01	-1.2E-02	1.7E-02
626	393600	3752500	1.9E+00	1.2E-01	1.5E-03	1.2E+00	1.2E-01	2.1E-02	1.9E-02	-7.0E-01	9.3E-04	2.0E-02
627	393700	3752500	1.9E+00	1.2E-01	1.6E-03	1.3E+00	1.4E-01	2.4E-02	1.9E-02	-5.8E-01	1.4E-02	2.3E-02
628	393800	3752500	1.9E+00	1.2E-01	1.6E-03	1.4E+00	1.5E-01	2.7E-02	2.0E-02	-4.5E-01	2.6E-02	2.6E-02
629	393900	3752500	1.7E+00	1.1E-01	1.5E-03	1.4E+00	1.5E-01	3.0E-02	2.0E-02	-3.1E-01	3.3E-02	2.8E-02
630	394000	3752500	1.6E+00	1.0E-01	1.4E-03	1.4E+00	1.4E-01	3.1E-02	2.0E-02	-2.0E-01	3.6E-02	2.9E-02
631	394100	3752500	1.4E+00	8.9E-02	1.2E-03	1.3E+00	1.2E-01	3.0E-02	1.9E-02	-1.2E-01	3.5E-02	2.9E-02
632	394200	3752500	1.2E+00	7.6E-02	1.1E-03	1.2E+00	1.1E-01	2.8E-02	1.9E-02	-6.2E-02	3.2E-02	2.7E-02
633	394300	3752500	1.1E+00	6.4E-02	8.9E-04	1.0E+00	9.1E-02	2.5E-02	1.8E-02	-3.5E-02	2.7E-02	2.4E-02
634	394400	3752500	8.9E-01	5.3E-02	7.4E-04	8.5E-01	7.5E-02	2.1E-02	1.7E-02	-3.2E-02	2.2E-02	2.0E-02
635	394500	3752500	7.5E-01	4.4E-02	6.0E-04	7.0E-01	6.1E-02	1.7E-02	1.6E-02	-4.6E-02	1.7E-02	1.7E-02
636	394600	3752500	6.3E-01	3.7E-02	4.9E-04	5.7E-01	5.0E-02	1.4E-02	1.5E-02	-6.4E-02	1.3E-02	1.4E-02
637	394700	3752500	5.4E-01	3.1E-02	4.0E-04	4.7E-01	4.1E-02	1.2E-02	1.4E-02	-7.9E-02	9.2E-03	1.1E-02
638	394800	3752500	4.8E-01	2.7E-02	3.4E-04	3.9E-01	3.4E-02	1.0E-02	1.3E-02	-9.0E-02	6.6E-03	9.6E-03
639	394900	3752500	4.2E-01	2.4E-02	2.9E-04	3.3E-01	2.9E-02	8.6E-03	1.2E-02	-9.6E-02	4.7E-03	8.3E-03
640	395000	3752500	3.8E-01	2.2E-02	2.6E-04	2.8E-01	2.5E-02	7.5E-03	1.2E-02	-1.0E-01	3.3E-03	7.3E-03
641	395100	3752500	3.5E-01	2.0E-02	2.3E-04	2.5E-01	2.2E-02	6.8E-03	1.1E-02	-1.0E-01	2.3E-03	6.5E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
642	395200	3752500	3.3E-01	1.8E-02	2.1E-04	2.2E-01	2.0E-02	6.2E-03	1.0E-02	-1.0E-01	1.5E-03	6.0E-03
643	395300	3752500	3.0E-01	1.7E-02	1.9E-04	2.0E-01	1.8E-02	5.8E-03	9.6E-03	-1.0E-01	8.4E-04	5.6E-03
644	395400	3752500	2.9E-01	1.6E-02	1.8E-04	1.9E-01	1.6E-02	5.4E-03	9.0E-03	-9.9E-02	3.6E-04	5.3E-03
645	392400	3752600	8.5E-01	5.0E-02	5.5E-04	3.8E-01	2.9E-02	9.5E-03	9.9E-03	-4.7E-01	-2.1E-02	9.0E-03
646	392500	3752600	9.0E-01	5.3E-02	5.9E-04	4.0E-01	3.1E-02	9.6E-03	1.1E-02	-5.0E-01	-2.2E-02	9.0E-03
647	392600	3752600	9.6E-01	5.7E-02	6.3E-04	4.3E-01	3.4E-02	9.8E-03	1.1E-02	-5.3E-01	-2.4E-02	9.1E-03
648	392700	3752600	1.0E+00	6.1E-02	6.8E-04	4.6E-01	3.7E-02	9.9E-03	1.2E-02	-5.6E-01	-2.5E-02	9.2E-03
649	392800	3752600	1.1E+00	6.6E-02	7.4E-04	5.0E-01	4.0E-02	1.0E-02	1.3E-02	-5.9E-01	-2.6E-02	9.4E-03
650	392900	3752600	1.2E+00	7.1E-02	8.0E-04	5.4E-01	4.4E-02	1.1E-02	1.4E-02	-6.3E-01	-2.7E-02	9.7E-03
651	393000	3752600	1.3E+00	7.8E-02	8.7E-04	5.9E-01	5.0E-02	1.1E-02	1.3E-02	-6.7E-01	-2.8E-02	1.0E-02
652	393100	3752600	1.4E+00	8.4E-02	9.5E-04	6.5E-01	5.6E-02	1.2E-02	1.4E-02	-7.1E-01	-2.8E-02	1.1E-02
653	393200	3752600	1.5E+00	9.1E-02	1.0E-03	7.2E-01	6.4E-02	1.3E-02	1.4E-02	-7.4E-01	-2.7E-02	1.2E-02
654	393300	3752600	1.6E+00	9.7E-02	1.1E-03	8.0E-01	7.4E-02	1.4E-02	1.5E-02	-7.5E-01	-2.4E-02	1.3E-02
655	393400	3752600	1.6E+00	1.0E-01	1.2E-03	8.9E-01	8.4E-02	1.6E-02	1.6E-02	-7.4E-01	-1.8E-02	1.4E-02
656	393500	3752600	1.7E+00	1.1E-01	1.3E-03	9.8E-01	9.6E-02	1.7E-02	1.6E-02	-6.9E-01	-1.0E-02	1.6E-02
657	393600	3752600	1.7E+00	1.1E-01	1.3E-03	1.1E+00	1.1E-01	1.9E-02	1.7E-02	-6.2E-01	-2.8E-05	1.8E-02
658	393700	3752600	1.7E+00	1.1E-01	1.3E-03	1.1E+00	1.2E-01	2.2E-02	1.7E-02	-5.2E-01	1.0E-02	2.0E-02
659	393800	3752600	1.6E+00	1.0E-01	1.3E-03	1.2E+00	1.2E-01	2.4E-02	1.8E-02	-4.2E-01	2.0E-02	2.3E-02
660	393900	3752600	1.5E+00	9.8E-02	1.3E-03	1.2E+00	1.2E-01	2.6E-02	1.8E-02	-3.2E-01	2.6E-02	2.5E-02
661	394000	3752600	1.4E+00	9.0E-02	1.2E-03	1.2E+00	1.2E-01	2.7E-02	1.7E-02	-2.3E-01	2.8E-02	2.6E-02
662	394100	3752600	1.3E+00	8.0E-02	1.1E-03	1.1E+00	1.1E-01	2.7E-02	1.7E-02	-1.6E-01	2.8E-02	2.5E-02
663	394200	3752600	1.1E+00	7.0E-02	9.3E-04	1.0E+00	9.6E-02	2.5E-02	1.7E-02	-1.1E-01	2.6E-02	2.4E-02
664	394300	3752600	9.8E-01	6.0E-02	8.0E-04	9.1E-01	8.2E-02	2.3E-02	1.6E-02	-7.5E-02	2.3E-02	2.2E-02
665	394400	3752600	8.4E-01	5.0E-02	6.7E-04	7.8E-01	6.9E-02	2.0E-02	1.5E-02	-6.2E-02	1.9E-02	1.9E-02
666	394500	3752600	7.2E-01	4.2E-02	5.6E-04	6.5E-01	5.7E-02	1.7E-02	1.5E-02	-6.4E-02	1.5E-02	1.6E-02
667	394600	3752600	6.1E-01	3.6E-02	4.6E-04	5.4E-01	4.7E-02	1.4E-02	1.4E-02	-7.3E-02	1.1E-02	1.4E-02
668	394700	3752600	5.3E-01	3.1E-02	3.9E-04	4.5E-01	3.9E-02	1.2E-02	1.3E-02	-8.3E-02	8.5E-03	1.1E-02
669	394800	3752600	4.7E-01	2.7E-02	3.3E-04	3.8E-01	3.3E-02	1.0E-02	1.2E-02	-9.0E-02	6.2E-03	9.7E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
670	394900	3752600	4.1E-01	2.3E-02	2.8E-04	3.2E-01	2.8E-02	8.7E-03	1.2E-02	-9.4E-02	4.5E-03	8.4E-03
671	395000	3752600	3.7E-01	2.1E-02	2.5E-04	2.8E-01	2.4E-02	7.6E-03	1.1E-02	-9.7E-02	3.3E-03	7.4E-03
672	395100	3752600	3.4E-01	1.9E-02	2.2E-04	2.4E-01	2.1E-02	6.8E-03	1.0E-02	-9.8E-02	2.3E-03	6.6E-03
673	395200	3752600	3.1E-01	1.7E-02	2.0E-04	2.2E-01	1.9E-02	6.2E-03	9.7E-03	-9.7E-02	1.5E-03	6.0E-03
674	395300	3752600	2.9E-01	1.6E-02	1.8E-04	2.0E-01	1.7E-02	5.8E-03	9.1E-03	-9.6E-02	9.3E-04	5.6E-03
675	395400	3752600	2.7E-01	1.5E-02	1.7E-04	1.8E-01	1.5E-02	5.4E-03	8.7E-03	-9.5E-02	4.6E-04	5.2E-03
676	392400	3752700	8.2E-01	4.8E-02	5.3E-04	3.7E-01	2.8E-02	9.5E-03	9.5E-03	-4.5E-01	-2.0E-02	9.0E-03
677	392500	3752700	8.6E-01	5.1E-02	5.6E-04	3.9E-01	3.0E-02	9.6E-03	1.0E-02	-4.8E-01	-2.1E-02	9.1E-03
678	392600	3752700	9.1E-01	5.4E-02	6.0E-04	4.1E-01	3.2E-02	9.7E-03	1.0E-02	-5.0E-01	-2.2E-02	9.1E-03
679	392700	3752700	9.7E-01	5.8E-02	6.4E-04	4.4E-01	3.5E-02	9.9E-03	1.1E-02	-5.3E-01	-2.3E-02	9.3E-03
680	392800	3752700	1.0E+00	6.2E-02	6.9E-04	4.7E-01	3.8E-02	1.0E-02	1.2E-02	-5.6E-01	-2.4E-02	9.5E-03
681	392900	3752700	1.1E+00	6.7E-02	7.5E-04	5.1E-01	4.2E-02	1.1E-02	1.2E-02	-6.0E-01	-2.5E-02	9.8E-03
682	393000	3752700	1.2E+00	7.2E-02	8.1E-04	5.6E-01	4.7E-02	1.1E-02	1.2E-02	-6.3E-01	-2.5E-02	1.0E-02
683	393100	3752700	1.3E+00	7.8E-02	8.8E-04	6.1E-01	5.3E-02	1.2E-02	1.3E-02	-6.6E-01	-2.5E-02	1.1E-02
684	393200	3752700	1.3E+00	8.3E-02	9.6E-04	6.7E-01	5.9E-02	1.3E-02	1.3E-02	-6.8E-01	-2.4E-02	1.2E-02
685	393300	3752700	1.4E+00	8.8E-02	1.0E-03	7.4E-01	6.7E-02	1.4E-02	1.4E-02	-6.8E-01	-2.1E-02	1.3E-02
686	393400	3752700	1.5E+00	9.2E-02	1.1E-03	8.1E-01	7.6E-02	1.5E-02	1.4E-02	-6.6E-01	-1.6E-02	1.4E-02
687	393500	3752700	1.5E+00	9.4E-02	1.1E-03	8.8E-01	8.5E-02	1.6E-02	1.4E-02	-6.2E-01	-9.0E-03	1.5E-02
688	393600	3752700	1.5E+00	9.4E-02	1.2E-03	9.5E-01	9.4E-02	1.8E-02	1.5E-02	-5.5E-01	-7.6E-04	1.7E-02
689	393700	3752700	1.5E+00	9.4E-02	1.2E-03	1.0E+00	1.0E-01	2.0E-02	1.5E-02	-4.8E-01	7.6E-03	1.9E-02
690	393800	3752700	1.4E+00	9.1E-02	1.2E-03	1.0E+00	1.1E-01	2.2E-02	1.6E-02	-3.9E-01	1.5E-02	2.0E-02
691	393900	3752700	1.4E+00	8.6E-02	1.1E-03	1.1E+00	1.1E-01	2.3E-02	1.6E-02	-3.1E-01	2.0E-02	2.2E-02
692	394000	3752700	1.3E+00	8.0E-02	1.0E-03	1.0E+00	1.0E-01	2.4E-02	1.6E-02	-2.4E-01	2.2E-02	2.3E-02
693	394100	3752700	1.2E+00	7.2E-02	9.4E-04	9.9E-01	9.5E-02	2.4E-02	1.5E-02	-1.8E-01	2.3E-02	2.3E-02
694	394200	3752700	1.0E+00	6.4E-02	8.3E-04	9.1E-01	8.5E-02	2.3E-02	1.5E-02	-1.4E-01	2.1E-02	2.2E-02
695	394300	3752700	9.2E-01	5.5E-02	7.3E-04	8.1E-01	7.4E-02	2.1E-02	1.4E-02	-1.0E-01	1.9E-02	2.0E-02
696	394400	3752700	8.0E-01	4.7E-02	6.2E-04	7.1E-01	6.4E-02	1.8E-02	1.4E-02	-8.6E-02	1.6E-02	1.8E-02
697	394500	3752700	6.9E-01	4.0E-02	5.2E-04	6.1E-01	5.4E-02	1.6E-02	1.3E-02	-8.0E-02	1.3E-02	1.5E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
698	394600	3752700	5.9E-01	3.4E-02	4.4E-04	5.1E-01	4.5E-02	1.4E-02	1.3E-02	-8.2E-02	1.0E-02	1.3E-02
699	394700	3752700	5.2E-01	3.0E-02	3.7E-04	4.3E-01	3.8E-02	1.2E-02	1.2E-02	-8.6E-02	7.9E-03	1.1E-02
700	394800	3752700	4.5E-01	2.6E-02	3.1E-04	3.6E-01	3.2E-02	1.0E-02	1.1E-02	-9.0E-02	5.9E-03	9.7E-03
701	394900	3752700	4.0E-01	2.3E-02	2.7E-04	3.1E-01	2.7E-02	8.7E-03	1.1E-02	-9.3E-02	4.3E-03	8.5E-03
702	395000	3752700	3.6E-01	2.0E-02	2.4E-04	2.7E-01	2.4E-02	7.7E-03	1.0E-02	-9.4E-02	3.2E-03	7.5E-03
703	395100	3752700	3.3E-01	1.8E-02	2.1E-04	2.4E-01	2.1E-02	6.9E-03	9.7E-03	-9.4E-02	2.3E-03	6.7E-03
704	395200	3752700	3.1E-01	1.7E-02	1.9E-04	2.1E-01	1.8E-02	6.3E-03	9.2E-03	-9.4E-02	1.6E-03	6.1E-03
705	395300	3752700	2.8E-01	1.6E-02	1.7E-04	1.9E-01	1.7E-02	5.8E-03	8.8E-03	-9.3E-02	1.0E-03	5.6E-03
706	395400	3752700	2.7E-01	1.5E-02	1.6E-04	1.8E-01	1.5E-02	5.4E-03	8.2E-03	-9.2E-02	5.5E-04	5.3E-03
707	392400	3752800	7.8E-01	4.6E-02	5.0E-04	3.5E-01	2.7E-02	9.5E-03	9.1E-03	-4.3E-01	-1.9E-02	9.0E-03
708	392500	3752800	8.3E-01	4.8E-02	5.3E-04	3.7E-01	2.8E-02	9.6E-03	9.4E-03	-4.5E-01	-2.0E-02	9.1E-03
709	392600	3752800	8.7E-01	5.1E-02	5.7E-04	3.9E-01	3.1E-02	9.7E-03	1.0E-02	-4.8E-01	-2.1E-02	9.2E-03
710	392700	3752800	9.3E-01	5.5E-02	6.1E-04	4.2E-01	3.3E-02	9.9E-03	1.1E-02	-5.1E-01	-2.2E-02	9.3E-03
711	392800	3752800	9.8E-01	5.9E-02	6.5E-04	4.5E-01	3.6E-02	1.0E-02	1.1E-02	-5.4E-01	-2.3E-02	9.6E-03
712	392900	3752800	1.0E+00	6.3E-02	7.0E-04	4.8E-01	4.0E-02	1.1E-02	1.1E-02	-5.7E-01	-2.3E-02	9.9E-03
713	393000	3752800	1.1E+00	6.7E-02	7.6E-04	5.2E-01	4.4E-02	1.1E-02	1.1E-02	-5.9E-01	-2.3E-02	1.0E-02
714	393100	3752800	1.2E+00	7.2E-02	8.2E-04	5.7E-01	4.9E-02	1.2E-02	1.2E-02	-6.1E-01	-2.3E-02	1.1E-02
715	393200	3752800	1.2E+00	7.6E-02	8.8E-04	6.2E-01	5.5E-02	1.3E-02	1.2E-02	-6.3E-01	-2.1E-02	1.2E-02
716	393300	3752800	1.3E+00	8.0E-02	9.3E-04	6.8E-01	6.2E-02	1.3E-02	1.3E-02	-6.2E-01	-1.8E-02	1.3E-02
717	393400	3752800	1.3E+00	8.3E-02	9.8E-04	7.4E-01	6.9E-02	1.5E-02	1.3E-02	-6.0E-01	-1.4E-02	1.4E-02
718	393500	3752800	1.4E+00	8.4E-02	1.0E-03	8.0E-01	7.6E-02	1.6E-02	1.3E-02	-5.6E-01	-8.1E-03	1.5E-02
719	393600	3752800	1.3E+00	8.4E-02	1.0E-03	8.5E-01	8.3E-02	1.7E-02	1.4E-02	-5.0E-01	-1.4E-03	1.6E-02
720	393700	3752800	1.3E+00	8.3E-02	1.0E-03	8.9E-01	8.8E-02	1.8E-02	1.4E-02	-4.4E-01	5.4E-03	1.7E-02
721	393800	3752800	1.3E+00	8.1E-02	1.0E-03	9.2E-01	9.2E-02	2.0E-02	1.4E-02	-3.7E-01	1.1E-02	1.9E-02
722	393900	3752800	1.2E+00	7.7E-02	9.6E-04	9.3E-01	9.2E-02	2.1E-02	1.4E-02	-3.1E-01	1.6E-02	2.0E-02
723	394000	3752800	1.2E+00	7.2E-02	9.0E-04	9.1E-01	8.9E-02	2.1E-02	1.4E-02	-2.5E-01	1.8E-02	2.1E-02
724	394100	3752800	1.1E+00	6.6E-02	8.3E-04	8.7E-01	8.4E-02	2.1E-02	1.4E-02	-2.0E-01	1.8E-02	2.1E-02
725	394200	3752800	9.7E-01	5.9E-02	7.5E-04	8.1E-01	7.6E-02	2.1E-02	1.3E-02	-1.6E-01	1.8E-02	2.0E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
726	394300	3752800	8.6E-01	5.2E-02	6.6E-04	7.4E-01	6.8E-02	1.9E-02	1.3E-02	-1.2E-01	1.6E-02	1.9E-02
727	394400	3752800	7.6E-01	4.5E-02	5.7E-04	6.5E-01	5.9E-02	1.7E-02	1.3E-02	-1.0E-01	1.4E-02	1.7E-02
728	394500	3752800	6.6E-01	3.9E-02	4.9E-04	5.7E-01	5.0E-02	1.5E-02	1.2E-02	-9.3E-02	1.2E-02	1.5E-02
729	394600	3752800	5.7E-01	3.3E-02	4.2E-04	4.9E-01	4.3E-02	1.3E-02	1.2E-02	-8.9E-02	9.3E-03	1.3E-02
730	394700	3752800	5.0E-01	2.9E-02	3.5E-04	4.1E-01	3.6E-02	1.2E-02	1.1E-02	-9.0E-02	7.3E-03	1.1E-02
731	394800	3752800	4.4E-01	2.5E-02	3.0E-04	3.5E-01	3.1E-02	1.0E-02	1.1E-02	-9.1E-02	5.5E-03	9.7E-03
732	394900	3752800	4.0E-01	2.2E-02	2.6E-04	3.0E-01	2.6E-02	8.8E-03	1.0E-02	-9.2E-02	4.1E-03	8.5E-03
733	395000	3752800	3.6E-01	2.0E-02	2.3E-04	2.6E-01	2.3E-02	7.8E-03	9.7E-03	-9.2E-02	3.1E-03	7.5E-03
734	395100	3752800	3.3E-01	1.8E-02	2.0E-04	2.3E-01	2.0E-02	7.0E-03	9.2E-03	-9.2E-02	2.2E-03	6.8E-03
735	395200	3752800	3.0E-01	1.6E-02	1.8E-04	2.1E-01	1.8E-02	6.3E-03	8.8E-03	-9.1E-02	1.6E-03	6.1E-03
736	395300	3752800	2.8E-01	1.5E-02	1.7E-04	1.9E-01	1.6E-02	5.8E-03	8.3E-03	-9.0E-02	1.1E-03	5.7E-03
737	395400	3752800	2.6E-01	1.4E-02	1.5E-04	1.7E-01	1.5E-02	5.4E-03	7.9E-03	-8.8E-02	6.3E-04	5.3E-03
738	393400	3750500	8.5E-01	5.5E-02	5.6E-04	3.8E-01	3.0E-02	8.0E-03	2.0E-02	-4.7E-01	-2.4E-02	7.4E-03
739	393500	3750500	9.0E-01	5.8E-02	5.9E-04	4.1E-01	3.2E-02	8.4E-03	2.2E-02	-5.0E-01	-2.6E-02	7.8E-03
740	393400	3750600	9.7E-01	6.3E-02	6.4E-04	4.4E-01	3.5E-02	8.8E-03	2.2E-02	-5.3E-01	-2.8E-02	8.1E-03
741	393500	3750600	1.0E+00	6.8E-02	6.8E-04	4.6E-01	3.7E-02	9.3E-03	2.5E-02	-5.7E-01	-3.0E-02	8.6E-03
742	394400	3750900	6.3E+00	4.5E-01	4.7E-03	3.0E+00	3.0E-01	4.7E-02	3.9E-02	-3.3E+00	-1.4E-01	4.2E-02
743	394500	3750900	6.0E+00	4.1E-01	4.9E-03	3.2E+00	3.2E-01	5.0E-02	3.3E-02	-2.8E+00	-9.5E-02	4.5E-02
744	394600	3750900	5.5E+00	3.7E-01	4.9E-03	3.3E+00	3.2E-01	5.1E-02	3.1E-02	-2.2E+00	-5.1E-02	4.6E-02
745	394700	3750900	4.8E+00	3.2E-01	4.5E-03	3.2E+00	3.1E-01	4.9E-02	2.6E-02	-1.6E+00	-1.6E-02	4.5E-02
746	393600	3751000	2.5E+00	1.8E-01	1.6E-03	1.1E+00	9.2E-02	2.1E-02	5.4E-02	-1.4E+00	-8.9E-02	1.9E-02
747	394400	3751000	7.5E+00	5.3E-01	6.4E-03	4.1E+00	4.2E-01	6.4E-02	4.6E-02	-3.4E+00	-1.1E-01	5.7E-02
748	394500	3751000	6.6E+00	4.5E-01	6.2E-03	4.2E+00	4.1E-01	6.2E-02	4.0E-02	-2.4E+00	-4.0E-02	5.6E-02
749	394600	3751000	5.6E+00	3.8E-01	5.6E-03	4.1E+00	3.9E-01	5.8E-02	3.3E-02	-1.5E+00	1.2E-02	5.2E-02
750	394700	3751000	4.7E+00	3.1E-01	4.9E-03	3.8E+00	3.5E-01	5.2E-02	2.8E-02	-9.5E-01	3.9E-02	4.7E-02
751	393600	3751100	3.5E+00	2.6E-01	2.2E-03	1.4E+00	1.2E-01	2.8E-02	6.9E-02	-2.1E+00	-1.3E-01	2.6E-02
752	393700	3751100	4.3E+00	3.2E-01	2.5E-03	1.7E+00	1.5E-01	3.4E-02	8.1E-02	-2.7E+00	-1.7E-01	3.1E-02
753	394400	3751100	8.2E+00	5.7E-01	8.5E-03	5.7E+00	5.6E-01	8.1E-02	5.4E-02	-2.5E+00	-1.7E-02	7.3E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
754	394500	3751100	6.7E+00	4.6E-01	7.3E-03	5.5E+00	5.2E-01	7.1E-02	4.4E-02	-1.2E+00	6.3E-02	6.4E-02
755	394600	3751100	5.3E+00	3.6E-01	6.0E-03	4.9E+00	4.5E-01	6.0E-02	3.8E-02	-4.3E-01	9.6E-02	5.4E-02
756	394700	3751100	4.3E+00	2.8E-01	4.9E-03	4.1E+00	3.8E-01	5.0E-02	3.1E-02	-1.5E-01	9.6E-02	4.5E-02
757	393600	3751200	5.4E+00	4.1E-01	3.0E-03	2.0E+00	1.8E-01	3.9E-02	9.2E-02	-3.4E+00	-2.3E-01	3.7E-02
758	393700	3751200	7.0E+00	5.4E-01	3.7E-03	2.4E+00	2.3E-01	5.0E-02	1.2E-01	-4.6E+00	-3.1E-01	4.6E-02
759	394200	3751200	1.4E+01	9.9E-01	1.4E-02	7.6E+00	8.0E-01	1.3E-01	9.7E-02	-6.0E+00	-1.9E-01	1.1E-01
760	394300	3751200	1.0E+01	7.4E-01	1.3E-02	7.9E+00	7.8E-01	1.1E-01	7.7E-02	-2.6E+00	3.4E-02	9.8E-02
761	394400	3751200	7.9E+00	5.5E-01	9.9E-03	7.6E+00	7.1E-01	8.8E-02	6.3E-02	-2.6E-01	1.6E-01	7.8E-02
762	394500	3751200	6.0E+00	4.1E-01	7.6E-03	6.6E+00	6.0E-01	6.9E-02	4.9E-02	6.4E-01	2.0E-01	6.2E-02
763	394600	3751200	4.6E+00	3.1E-01	5.8E-03	5.3E+00	4.8E-01	5.5E-02	4.0E-02	7.3E-01	1.7E-01	4.9E-02
764	394700	3751200	3.6E+00	2.4E-01	4.4E-03	4.1E+00	3.7E-01	4.4E-02	3.3E-02	5.3E-01	1.3E-01	3.9E-02
765	392400	3751300	1.2E+00	7.2E-02	7.7E-04	5.0E-01	3.9E-02	1.0E-02	1.3E-02	-6.5E-01	-3.3E-02	9.6E-03
766	392500	3751300	1.3E+00	8.0E-02	8.5E-04	5.5E-01	4.3E-02	1.1E-02	1.4E-02	-7.2E-01	-3.7E-02	9.8E-03
767	392600	3751300	1.4E+00	9.0E-02	9.4E-04	6.0E-01	4.8E-02	1.1E-02	1.5E-02	-7.9E-01	-4.2E-02	1.0E-02
768	392700	3751300	1.6E+00	1.0E-01	1.1E-03	6.7E-01	5.4E-02	1.1E-02	1.7E-02	-8.9E-01	-4.8E-02	1.0E-02
769	393900	3751300	4.5E+01	3.7E+00	1.3E-02	9.6E+00	1.5E+00	1.8E-01	3.4E-01	-3.5E+01	-2.2E+00	1.6E-01
770	394300	3751300	9.2E+00	6.5E-01	1.4E-02	1.1E+01	1.0E+00	1.1E-01	8.9E-02	2.1E+00	3.9E-01	9.2E-02
771	394400	3751300	6.5E+00	4.5E-01	9.8E-03	9.1E+00	8.2E-01	7.7E-02	6.7E-02	2.7E+00	3.7E-01	6.7E-02
772	392400	3751400	1.2E+00	7.3E-02	7.7E-04	5.1E-01	3.9E-02	1.0E-02	1.4E-02	-6.5E-01	-3.3E-02	9.5E-03
773	392500	3751400	1.3E+00	8.1E-02	8.6E-04	5.5E-01	4.4E-02	1.1E-02	1.5E-02	-7.2E-01	-3.7E-02	9.7E-03
774	392600	3751400	1.4E+00	9.1E-02	9.6E-04	6.1E-01	4.9E-02	1.1E-02	1.7E-02	-8.0E-01	-4.2E-02	9.9E-03
775	392700	3751400	1.6E+00	1.0E-01	1.1E-03	6.8E-01	5.5E-02	1.1E-02	1.9E-02	-9.0E-01	-4.8E-02	1.0E-02
776	393600	3751400	1.8E+01	1.5E+00	6.4E-03	4.6E+00	5.2E-01	7.5E-02	1.5E-01	-1.3E+01	-9.4E-01	6.9E-02
777	393700	3751400	4.9E+01	4.1E+00	1.4E-02	9.1E+00	1.4E+00	1.2E-01	2.6E-01	-4.0E+01	-2.7E+00	1.1E-01
778	393800	3751400	2.3E+02	2.0E+01	6.2E-02	3.0E+01	6.9E+00	2.8E-01	5.1E-01	-2.0E+02	-1.3E+01	2.1E-01
779	394400	3751400	4.8E+00	3.3E-01	8.3E-03	9.3E+00	8.1E-01	5.7E-02	6.9E-02	4.6E+00	4.8E-01	4.9E-02
780	392400	3751500	1.1E+00	7.2E-02	7.7E-04	5.0E-01	3.9E-02	1.0E-02	1.3E-02	-6.5E-01	-3.3E-02	9.3E-03
781	392500	3751500	1.3E+00	8.0E-02	8.6E-04	5.5E-01	4.4E-02	1.0E-02	1.5E-02	-7.1E-01	-3.6E-02	9.5E-03

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
782	393600	3751500	3.0E+01	2.5E+00	1.3E-02	1.4E+01	2.3E+00	9.2E-02	1.7E-01	-1.6E+01	-2.7E-01	7.8E-02
783	394300	3751500	4.7E+00	3.3E-01	9.3E-03	1.5E+01	1.3E+00	5.6E-02	9.6E-02	1.0E+01	9.3E-01	4.6E-02
784	394400	3751500	3.2E+00	2.2E-01	5.7E-03	8.4E+00	7.2E-01	4.1E-02	6.7E-02	5.1E+00	5.0E-01	3.5E-02
785	392400	3751600	1.1E+00	7.0E-02	7.6E-04	4.9E-01	3.8E-02	9.9E-03	1.3E-02	-6.4E-01	-3.2E-02	9.2E-03
786	392500	3751600	1.2E+00	7.8E-02	8.4E-04	5.4E-01	4.3E-02	1.0E-02	1.4E-02	-7.0E-01	-3.6E-02	9.3E-03
787	392600	3751600	1.4E+00	8.8E-02	9.5E-04	6.0E-01	4.8E-02	1.1E-02	1.6E-02	-7.8E-01	-4.0E-02	9.6E-03
788	392700	3751600	1.5E+00	1.0E-01	1.1E-03	6.7E-01	5.4E-02	1.1E-02	1.8E-02	-8.7E-01	-4.6E-02	9.9E-03
789	394400	3751600	2.2E+00	1.5E-01	3.5E-03	6.0E+00	5.1E-01	3.1E-02	6.5E-02	3.7E+00	3.6E-01	2.8E-02
790	392400	3751700	1.1E+00	6.9E-02	7.4E-04	4.8E-01	3.7E-02	9.8E-03	1.3E-02	-6.2E-01	-3.1E-02	9.0E-03
791	392500	3751700	1.2E+00	7.6E-02	8.2E-04	5.3E-01	4.1E-02	1.0E-02	1.4E-02	-6.9E-01	-3.5E-02	9.2E-03
792	392600	3751700	1.3E+00	8.5E-02	9.2E-04	5.8E-01	4.6E-02	1.0E-02	1.5E-02	-7.6E-01	-3.9E-02	9.4E-03
793	392700	3751700	1.5E+00	9.7E-02	1.0E-03	6.5E-01	5.2E-02	1.1E-02	1.7E-02	-8.5E-01	-4.4E-02	9.7E-03
794	394100	3751700	5.5E+00	3.7E-01	1.1E-02	1.4E+01	1.2E+00	1.0E-01	1.1E-01	9.0E+00	8.6E-01	9.1E-02
795	394200	3751700	3.5E+00	2.3E-01	5.9E-03	1.2E+01	9.8E-01	6.2E-02	1.0E-01	8.1E+00	7.5E-01	5.6E-02
796	394300	3751700	2.4E+00	1.6E-01	3.8E-03	8.1E+00	6.8E-01	4.0E-02	8.0E-02	5.7E+00	5.3E-01	3.6E-02
797	392400	3751800	1.1E+00	6.7E-02	7.2E-04	4.7E-01	3.6E-02	9.6E-03	1.3E-02	-6.1E-01	-3.1E-02	8.9E-03
798	392500	3751800	1.2E+00	7.4E-02	8.0E-04	5.1E-01	4.0E-02	9.8E-03	1.4E-02	-6.7E-01	-3.4E-02	9.0E-03
799	394100	3751800	4.1E+00	2.7E-01	6.7E-03	7.3E+00	6.3E-01	9.0E-02	7.9E-02	3.2E+00	3.5E-01	8.4E-02
800	394200	3751800	2.8E+00	1.8E-01	4.3E-03	5.9E+00	5.0E-01	5.9E-02	6.9E-02	3.1E+00	3.2E-01	5.4E-02
801	394300	3751800	1.9E+00	1.2E-01	2.5E-03	3.7E+00	3.2E-01	3.7E-02	5.9E-02	1.8E+00	2.0E-01	3.5E-02
802	392500	3751900	1.2E+00	7.2E-02	7.8E-04	5.0E-01	3.9E-02	9.7E-03	1.4E-02	-6.5E-01	-3.3E-02	9.0E-03
803	392600	3751900	1.3E+00	8.0E-02	8.7E-04	5.5E-01	4.3E-02	1.0E-02	1.5E-02	-7.2E-01	-3.7E-02	9.1E-03
804	392700	3751900	1.4E+00	8.9E-02	9.7E-04	6.1E-01	4.8E-02	1.0E-02	1.6E-02	-7.9E-01	-4.1E-02	9.4E-03
805	394100	3751900	3.3E+00	2.2E-01	4.5E-03	4.9E+00	4.2E-01	7.8E-02	6.0E-02	1.6E+00	2.1E-01	7.4E-02
806	394200	3751900	2.4E+00	1.5E-01	3.2E-03	3.9E+00	3.3E-01	5.5E-02	5.4E-02	1.5E+00	1.8E-01	5.2E-02
807	394300	3751900	1.7E+00	1.1E-01	2.0E-03	2.7E+00	2.3E-01	3.7E-02	4.8E-02	9.7E-01	1.2E-01	3.5E-02
808	394400	3751900	1.3E+00	7.8E-02	1.3E-03	1.7E+00	1.4E-01	2.5E-02	4.1E-02	4.0E-01	6.6E-02	2.4E-02
809	394500	3751900	1.0E+00	6.2E-02	9.4E-04	1.1E+00	9.7E-02	1.8E-02	3.5E-02	1.0E-01	3.6E-02	1.7E-02

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
810	394600	3751900	8.4E-01	5.1E-02	7.5E-04	8.3E-01	7.3E-02	1.4E-02	3.0E-02	-1.3E-02	2.2E-02	1.4E-02
811	394700	3751900	7.4E-01	4.4E-02	6.2E-04	6.7E-01	5.9E-02	1.2E-02	2.5E-02	-6.9E-02	1.5E-02	1.1E-02
812	392500	3752000	1.1E+00	6.9E-02	7.6E-04	4.9E-01	3.8E-02	9.7E-03	1.3E-02	-6.4E-01	-3.2E-02	8.9E-03
813	392600	3752000	1.2E+00	7.7E-02	8.4E-04	5.3E-01	4.2E-02	9.9E-03	1.4E-02	-7.0E-01	-3.5E-02	9.1E-03
814	392700	3752000	1.4E+00	8.6E-02	9.4E-04	5.9E-01	4.7E-02	1.0E-02	1.5E-02	-7.7E-01	-3.9E-02	9.3E-03
815	394100	3752000	2.7E+00	1.8E-01	3.3E-03	3.6E+00	3.2E-01	6.7E-02	4.7E-02	8.4E-01	1.4E-01	6.3E-02
816	394200	3752000	2.1E+00	1.3E-01	2.5E-03	2.9E+00	2.5E-01	5.0E-02	4.4E-02	8.3E-01	1.2E-01	4.8E-02
817	394300	3752000	1.6E+00	9.7E-02	1.7E-03	2.1E+00	1.8E-01	3.6E-02	3.9E-02	5.8E-01	8.7E-02	3.4E-02
818	394400	3752000	1.2E+00	7.2E-02	1.2E-03	1.5E+00	1.3E-01	2.5E-02	3.5E-02	2.8E-01	5.3E-02	2.4E-02
819	394500	3752000	9.4E-01	5.7E-02	8.5E-04	1.0E+00	8.8E-02	1.9E-02	3.0E-02	7.0E-02	3.1E-02	1.8E-02
820	394600	3752000	7.8E-01	4.7E-02	6.7E-04	7.5E-01	6.6E-02	1.4E-02	2.6E-02	-2.9E-02	1.9E-02	1.4E-02
821	394700	3752000	6.8E-01	4.0E-02	5.5E-04	6.0E-01	5.3E-02	1.2E-02	2.3E-02	-7.6E-02	1.3E-02	1.1E-02
822	394100	3752100	2.3E+00	1.5E-01	2.5E-03	2.8E+00	2.5E-01	5.6E-02	3.8E-02	4.4E-01	9.9E-02	5.3E-02
823	394200	3752100	1.8E+00	1.2E-01	2.0E-03	2.3E+00	2.0E-01	4.5E-02	3.5E-02	4.6E-01	8.4E-02	4.3E-02
824	394300	3752100	1.4E+00	8.8E-02	1.5E-03	1.8E+00	1.5E-01	3.4E-02	3.3E-02	3.5E-01	6.5E-02	3.2E-02
825	394400	3752100	1.1E+00	6.8E-02	1.1E-03	1.3E+00	1.1E-01	2.5E-02	2.9E-02	1.8E-01	4.4E-02	2.4E-02
826	394500	3752100	8.9E-01	5.3E-02	7.9E-04	9.4E-01	8.1E-02	1.9E-02	2.6E-02	4.6E-02	2.8E-02	1.8E-02
827	394600	3752100	7.4E-01	4.4E-02	6.2E-04	7.0E-01	6.2E-02	1.4E-02	2.3E-02	-3.6E-02	1.8E-02	1.4E-02
828	394700	3752100	6.3E-01	3.7E-02	5.0E-04	5.6E-01	4.9E-02	1.2E-02	2.1E-02	-7.9E-02	1.2E-02	1.1E-02
829	394100	3752200	2.0E+00	1.3E-01	2.0E-03	2.2E+00	2.0E-01	4.7E-02	3.1E-02	1.9E-01	7.4E-02	4.5E-02
830	394200	3752200	1.6E+00	1.0E-01	1.6E-03	1.9E+00	1.7E-01	4.0E-02	3.0E-02	2.4E-01	6.3E-02	3.8E-02
831	394300	3752200	1.3E+00	8.1E-02	1.3E-03	1.5E+00	1.3E-01	3.2E-02	2.7E-02	2.0E-01	5.1E-02	3.0E-02
832	393555.2	3751769	7.6E+00	5.9E-01	6.7E-03	4.9E+00	6.3E-01	4.5E-02	7.5E-02	-2.7E+00	3.9E-02	3.8E-02
833	393617.9	3751769	9.7E+00	7.3E-01	8.5E-03	6.5E+00	8.9E-01	5.8E-02	8.4E-02	-3.2E+00	1.7E-01	5.0E-02
834	393680.6	3751769	1.1E+01	8.3E-01	1.0E-02	8.0E+00	1.1E+00	7.9E-02	8.8E-02	-3.3E+00	2.5E-01	6.8E-02
835	393743.2	3751769	1.1E+01	8.2E-01	1.1E-02	9.2E+00	1.2E+00	1.0E-01	9.7E-02	-2.0E+00	3.3E-01	9.4E-02
836	393743.2	3751721	1.4E+01	1.1E+00	1.4E-02	1.2E+01	1.5E+00	1.2E-01	1.2E-01	-2.0E+00	4.7E-01	1.0E-01
837	393743.2	3751672	1.8E+01	1.4E+00	2.0E-02	1.7E+01	2.1E+00	1.4E-01	1.5E-01	-8.3E-01	7.3E-01	1.2E-01

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
838	393815.1	3751672	1.4E+01	1.1E+00	1.6E-02	2.2E+01	2.3E+00	1.6E-01	1.6E-01	7.6E+00	1.2E+00	1.5E-01
839	393887	3751672	1.1E+01	8.2E-01	1.4E-02	1.3E+01	1.4E+00	1.8E-01	1.6E-01	1.9E+00	5.4E-01	1.7E-01
840	393958.9	3751672	8.7E+00	6.2E-01	1.4E-02	1.3E+01	1.2E+00	1.8E-01	1.5E-01	4.2E+00	6.0E-01	1.7E-01
841	394030.7	3751672	7.3E+00	5.0E-01	1.4E-02	1.3E+01	1.2E+00	1.4E-01	1.3E-01	6.1E+00	6.8E-01	1.3E-01
842	394102.6	3751672	5.8E+00	3.9E-01	1.1E-02	2.1E+01	1.8E+00	1.1E-01	1.3E-01	1.5E+01	1.4E+00	9.4E-02
843	394174.5	3751672	4.1E+00	2.8E-01	7.4E-03	1.6E+01	1.3E+00	7.2E-02	1.3E-01	1.2E+01	1.1E+00	6.5E-02
844	394246.4	3751672	3.6E+00	2.5E-01	7.6E-03	2.4E+01	2.0E+00	7.0E-02	1.4E-01	2.0E+01	1.7E+00	6.2E-02
845	394318.2	3751672	2.3E+00	1.6E-01	3.6E-03	7.8E+00	6.6E-01	3.7E-02	8.5E-02	5.4E+00	5.0E-01	3.3E-02
846	394318.2	3751599	3.1E+00	2.1E-01	5.7E-03	2.2E+01	1.8E+00	6.0E-02	9.1E-02	1.8E+01	1.6E+00	5.5E-02
847	394318.2	3751526	3.9E+00	2.7E-01	7.4E-03	1.3E+01	1.1E+00	4.8E-02	8.8E-02	9.3E+00	8.6E-01	4.1E-02
848	394289.2	3751526	4.3E+00	3.0E-01	8.5E-03	1.6E+01	1.3E+00	5.3E-02	9.8E-02	1.1E+01	1.0E+00	4.5E-02
849	394258.7	3751469	6.3E+00	4.5E-01	1.3E-02	2.1E+01	1.8E+00	7.5E-02	1.2E-01	1.4E+01	1.3E+00	6.2E-02
850	394320.1	3751469	4.9E+00	3.5E-01	9.6E-03	1.3E+01	1.1E+00	5.8E-02	8.9E-02	8.0E+00	7.6E-01	4.8E-02
851	394320.3	3751429	5.7E+00	4.0E-01	1.1E-02	1.3E+01	1.2E+00	6.7E-02	9.1E-02	7.7E+00	7.6E-01	5.6E-02
852	394320.5	3751389	6.5E+00	4.6E-01	1.2E-02	1.3E+01	1.1E+00	7.7E-02	8.9E-02	6.3E+00	6.7E-01	6.5E-02
853	394285.7	3751389	7.5E+00	5.4E-01	1.4E-02	1.5E+01	1.3E+00	8.7E-02	1.0E-01	7.1E+00	7.5E-01	7.4E-02
854	394285.7	3751337	8.8E+00	6.2E-01	1.4E-02	1.3E+01	1.2E+00	1.0E-01	9.5E-02	4.2E+00	5.4E-01	8.8E-02
855	394285.7	3751286	1.0E+01	7.1E-01	1.5E-02	1.1E+01	1.0E+00	1.1E-01	9.0E-02	9.5E-01	3.1E-01	9.8E-02
856	394239	3751286	1.2E+01	8.6E-01	1.8E-02	1.1E+01	1.1E+00	1.3E-01	1.0E-01	-7.7E-01	2.1E-01	1.1E-01
857	394192.2	3751286	1.5E+01	1.1E+00	2.2E-02	1.1E+01	1.1E+00	1.5E-01	1.2E-01	-3.3E+00	6.3E-02	1.3E-01
858	394197.2	3751349	1.2E+01	9.0E-01	2.2E-02	1.6E+01	1.5E+00	1.3E-01	1.3E-01	3.8E+00	5.9E-01	1.1E-01
859	394186.2	3751352	1.3E+01	9.5E-01	2.4E-02	1.7E+01	1.6E+00	1.4E-01	1.3E-01	4.0E+00	6.2E-01	1.1E-01
860	394170.7	3751318	1.6E+01	1.2E+00	2.8E-02	1.4E+01	1.3E+00	1.6E-01	1.4E-01	-2.0E+00	1.8E-01	1.3E-01
861	394155.3	3751284	1.7E+01	1.3E+00	2.5E-02	1.1E+01	1.2E+00	1.7E-01	1.4E-01	-6.0E+00	-1.1E-01	1.4E-01
862	394081.5	3751283	2.1E+01	1.6E+00	2.4E-02	1.0E+01	1.2E+00	2.1E-01	1.9E-01	-1.1E+01	-4.1E-01	1.9E-01
863	394007.7	3751283	2.7E+01	2.1E+00	1.7E-02	9.4E+00	1.3E+00	2.2E-01	2.6E-01	-1.7E+01	-8.7E-01	2.0E-01
864	393951.1	3751319	4.0E+01	3.3E+00	2.1E-02	1.2E+01	1.8E+00	2.9E-01	3.9E-01	-2.9E+01	-1.5E+00	2.7E-01
865	393894.6	3751356	7.8E+01	6.6E+00	2.1E-02	1.7E+01	3.2E+00	3.8E-01	7.7E-01	-6.1E+01	-3.4E+00	3.6E-01

Table K-1. Net Risk Calculations

Receptor Number	UTM Coordinates (NAD83)		Pre-Project Risk			Post-Project Risk				Net Risk		
	Easting (m)	Northing (m)	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI	Acute HI	Res Cancer (per million)	Worker Cancer (per million)	Chronic HI
866	393838	3751392	2.2E+02	1.9E+01	5.9E-02	4.3E+01	1.1E+01	3.9E-01	9.3E-01	-1.8E+02	-8.4E+00	3.3E-01
867	393781.4	3751429	2.4E+02	2.1E+01	6.5E-02	4.8E+01	1.2E+01	3.1E-01	4.6E-01	-2.0E+02	-9.3E+00	2.4E-01
868	393724.9	3751465	1.6E+02	1.4E+01	4.3E-02	4.8E+01	1.2E+01	3.3E-01	5.9E-01	-1.1E+02	-2.6E+00	2.9E-01
869	393668.3	3751502	9.1E+01	8.4E+00	2.7E-02	5.5E+01	1.2E+01	1.9E-01	3.4E-01	-3.6E+01	3.4E+00	1.6E-01
870	393611.8	3751538	3.4E+01	3.4E+00	2.2E-02	4.9E+01	9.9E+00	1.1E-01	1.9E-01	1.5E+01	6.5E+00	8.7E-02
871	393555.2	3751575	1.6E+01	1.3E+00	1.2E-02	1.2E+01	2.0E+00	6.7E-02	1.2E-01	-3.6E+00	6.5E-01	5.5E-02
872	393555.2	3751639	1.2E+01	1.0E+00	1.0E-02	8.7E+00	1.3E+00	5.8E-02	1.0E-01	-3.5E+00	3.0E-01	4.8E-02
873	393555.2	3751704	9.5E+00	7.5E-01	8.3E-03	6.3E+00	8.5E-01	5.1E-02	9.0E-02	-3.2E+00	1.0E-01	4.2E-02

EXHIBIT L. DEFINITIONS AND ACRONYMNS

Definitions

Acute Health Effects – A health effect that occurs after a relatively short period of exposure (e.g., minutes or hours).

Cancer Burden – the estimated increase in the occurrence of cancer cases in a population subject to a maximum individual cancer risk (MICR) of greater than or equal to one in one million (1×10^{-6}) resulting from exposure to toxic air contaminants.

Carcinogenic Risk – A theoretical risk for getting cancer based on a lifetime exposure).

Centroid Locations – The location at which calculated ambient concentration is assumed to represent the entire subarea, typically the geographic centroid of an area.

Chronic Health Effects – An adverse non-cancer health effect that develops and persists (e.g., months or years) over time after long-term exposure to a substance.

8-Hour Chronic Health Effects – An adverse non-cancer health effect that develops and persists (e.g., months or years) over time after repeated 8-hour exposure to a substance over a significant fraction of a lifetime.

Dispersion Factor (X/Q) – A site-specific quantity defined as a ratio of the ground level concentration in air ($\mu g/m^3$) to the mass emission rate (g/s).

Exposure Pathway – A route of exposure by which foreign substances enter the human body (e.g., inhalation, ingestion, dermal absorption).

Health Risk Assessment – a technical study identifying toxic air contaminant emissions released from a facility, exposure assessment, dose-response assessment and risk characterization as outlined by the Office of Environmental Health Hazard Assessment (OEHHA) "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments" and the SCAQMD "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act".

Individual Excess Cancer Risk – The theoretical probability of an individual person developing cancer as a result of lifetime exposure to carcinogenic substances. The individual excess cancer risk is calculated by summing the potential cancer risks due to both inhalation and noninhalation routes of exposure.

Individual Substance Acute Hazard Index (HI) – the ratio of the estimated maximum one-hour, or other time period as specified by the Executive Officer, concentration of a toxic air contaminant at a receptor location to its acute reference exposure level.

Individual Substance Chronic Hazard Index (HI) – the ratio of the long-term level of exposure to a toxic air contaminant for a potential maximally exposed individual to the chronic reference exposure level for the toxic air contaminant.

Inhalation Unit Risk Factor – The theoretical upper bound probability of extra cancer cases occurring in the exposed population assuming a lifetime exposure to the chemical when the air concentration is expressed in exposure units of per microgram/cubic meter $[(\mu g/m3)^{-1}]$

Maximum Individual Cancer Risk (MICR) – the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants pursuant to the SCAQMD approved Risk Assessment Procedures. The MICR calculations include multi-pathway consideration, if applicable.

Receptor Location –

(A) For the purpose of calculating acute HI, any location outside the boundaries of the facility at which a person could experience acute exposure; and

(B) For the purpose of calculating chronic HI, MICR, or cancer burden, any location outside the boundaries of the facility at which a person could experience chronic exposure.

Reference Exposure Level (REL) – the concentration level at or below which no adverse non-cancer health effects are anticipated for the specified exposure duration.

Sensitive Receptor – A location such as a hospital or daycare center where the human occupants are considered to be more sensitive to pollutants than "average".

Total Acute Hazard Index (HI) – the sum of the individual substance acute HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Total Chronic Hazard Index (HI) – the sum of the individual substance chronic HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Toxic Air Contaminant (TAC) – an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health as listed by OEHHA.

Acronyms

AB2588 – Assembly Bill 2588

AERMOD – American Meteorological Society/Environmental Protection Agency Regulatory Model

ARB – California Air Resources Board

CAS No. – Chemical Abstract Services Registry Number (CAS)

GLC – ground level concentration

HARP – Hot Spots Analysis and Reporting Program

HRA – health risk assessment

HI – hazard index

MEIR – maximum exposed individual resident

MEIW – maximum exposed individual worker

MICR – maximum individual cancer risk

$\mu g/m^3$ – microgram per cubic meter

OEHHA – Office of Environmental Health Hazard Assessment

REL – reference exposure level

SCAQMD – South Coast Air Quality Management District

UTM – Universal Transverse Mercator

EXHIBIT M. ELECTRONIC FILES

Electronic files on file with City of Paramount.

ATTACHMENT E. LAKEWOOD TANK FARM HEALTH RISK ASSESSMENT (HRA)

Paramount Petroleum Corporation
Lakewood Tank Farm
SCAQMD Facility ID 037369

Health Risk Assessment

Prepared by:

Ashworth Leininger Group
601 East Daily Drive, Suite 302
Camarillo, California 93010
(805) 764-6010

In coordination with

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
(714) 632-8521

Prepared July 2021

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1.0 EXECUTIVE SUMMARY

AltAir Paramount, LLC, a wholly owned subsidiary of World Energy, proposes to complete the conversion of the Paramount Refinery in Paramount, California, to a Renewable Fuels Facility. In 2013, portions of the refinery were converted from processing crude oil and other petroleum products to renewable diesel, jet fuel, and naphtha production from renewable feedstocks like vegetable oils and tallow. The project will convert the remainder of the Paramount Refinery into a renewable fuels production facility. Modifications will also be made to the Lakewood Tank Farm, located about 3 miles south of the refinery. The Lakewood Tank Farm is currently idle[1] but existing storage and pipeline facilities will resume service for jet fuel storage and blending. A health risk assessment was prepared for the Lakewood Tank Farm future operations, to determine if the project has the potential to produce significant risks. The analysis determined that cancer, chronic, and acute risks are expected to be well below significance levels. The HRA was prepared in coordination with Environmental Audit, Inc.

1.1 Facility Information

The Paramount Lakewood Tank Farm consists of two 55,000 barrel petroleum floating roof storage tanks and a few smaller fixed roof tanks. The two floating roof tanks will be put in jet fuel service and tanks 5001 and 5002 will remain unchanged. Figures 1 and 2, below, show the facility location. The complete address is as follows:

Paramount Petroleum Corporation
Lakewood Tank Farm
2922 E South St
Long Beach, CA 90723
SCAQMD Facility ID #037369

Figure 1. General Location Map



[1] Facility is idle except for a remediation system that is unaffected by this project.

Figure 2. Detailed Location Map



1.2 Substances Emitted

Emission sources included in this analysis at the Lakewood Tank Farm include two external floating roof storage tanks and fugitive emissions from piping components. Substances emitted, and their respective annual and maximum hourly emissions are shown in Table A-1, Table C-1 and Table C-2 of the Exhibits.

1.3 Pathways and Target Organs

All substances potentially emitted were evaluated for risk based on inhalation exposure. There will be no multi-pathway pollutants emitted at the Lakewood Tank Farm.

1.4 Dispersion Modeling and Exposure Assessment

This health risk assessment was performed following the SCAQMD and Office of Environmental Health Hazard Assessment (OEHHA) guidelines[2]. As recommended by these guidelines, the California Air Resources Board (CARB) Hotspots Analysis and Reporting Program (HARP, v 21081) was used to perform a refined health risk assessment for the project's emission sources. The AERMOD (v. 21112) air dispersion model was used for this analysis. HARP includes AERMOD but also allows model runs to be performed with AERMOD outside of HARP. For this project, AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis.

Source locations, dimensions, and operating parameters were entered into AERMOD to estimate normalized ground level concentrations from each source based on an emission rate of one gram per second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance. For this analysis, the dermal absorption, soil ingestion, mother's milk, and home grown produce ingestion pathways, along with inhalation, were considered to be viable exposure pathways for the area of impact.

1.5 Dose-Response Assessment

As described in the OEHHA risk assessment guidelines, the dose-response assessment describes the quantitative relationship between the amount of exposure of a person to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). For carcinogens, this information is quantified as a cancer potency slope. For non-carcinogens, dose-response information is characterized as a reference exposure level (REL).

1.5.1 Carcinogens

OEHHA has developed cancer potency factors for inhalation and non-inhalation pathways. The cancer potency factors represent an upper bound probability of developing cancer based on a continuous lifetime exposure to one milligram per kilogram of body weight of a substance. The cancer potency factor does not represent a threshold under which a person would not develop cancer but instead is used to estimate the probability of developing cancer. OEHHA regularly

[2] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018.

California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015.

updates cancer potency factors as new information becomes available. This assessment is based on the latest health tables made available by OEHHA[3].

1.5.2 Non-Carcinogens

OEHHA has developed RELs for acute and chronic non-carcinogenic impacts. Unlike cancer potency factors, these RELs represent concentration thresholds at which no adverse non-cancer health effects are anticipated. Since a substance may affect multiple organs or endpoints, each substance may have multiple RELs to represent each toxicological endpoint. However, the REL for the most sensitive endpoint is used to ensure the REL considers the most adverse potential impacts. The chronic RELs are based on continuous exposure over a significant fraction of a lifetime. The acute RELs are typically based on a 1-hour exposure. Chronic RELs have been developed for inhalation and non-inhalation pathways while acute RELs have been developed only for the inhalation pathway. OEHHA regularly updates the RELs and this health risk assessment is based on the latest HARP health tables made available by OEHHA.

1.6 Summary of Results

The predicted health risks at maximally exposed offsite receptors are summarized by category in Table 1, below.

Table 1. Summary of Results

Location	Risk/HI Value	Receptor Number	UTM Coordinates (NAD83)	
			Easting (m)	Northing (m)
Cancer Risk (Per Million)				
Maximum exposed individual resident (MEIR)	0.23	28	393019	3747083
Maximum exposed individual worker (MEIW)[4]	0.0056	393	393100	3747150
Highest sensitive receptor	0.11	5	393036	3746943
Chronic Hazard Index				
Maximum exposed individual	0.00044	251	393200	3746850
Acute Hazard Index				
Point of maximum impact (PMI)	0.0030	14	393019	3746955

1.6.1 Cancer Risk

The highest cancer risk at a residential receptor was 0.23 per million, at receptor #28 on the northern boundary of the facility. Although the receptor is located on the fenceline, a residential neighborhood is located immediately adjacent to the fenceline, therefore the receptor was considered residential. The highest calculated worker exposure cancer risk was 0.0056 per million, at a church located about 100 meters north of the facility (receptor #393). The highest calculated

[3] The health database at the time of modeling was version 19252 (September 9, 2019).

[4] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

cancer risk at a sensitive receptor was 0.11 per million, at Davenport Park (receptor #5) located immediately south of the facility. Table 5 provides a list of the sensitive receptors and their respective cancer risk.

Cancer risk at each of these receptors was due to exposure to naphthalene, benzene, and ethyl benzene from the two storage tanks and associated piping components.

Table G-1 and Table H-1 of the Exhibits show the cancer risk by substance and by emission source. A map showing the location of the PMI, MEIR, and MEIW is included as Figure I-1 of the Exhibits. Contour maps were not generated as cancer risk was below one per million at all receptors.

1.6.2 Chronic Risk

The chronic hazard index was well below one at all receptors. The chronic hazard index at the maximum exposed individual receptor was 0.00044, at residential receptor #251 located about 100 meters southeast of the facility. Chronic risk was due to benzene emissions. The associated target organ/system was the hematologic system (blood).

Table G-2 and Table H-2 of the Exhibits show the chronic risk by substance and by emission source. As the maximum chronic risk was below 0.5 at all receptors, no contour map was generated.

1.6.3 Acute Risk

The acute hazard index was well below one at all receptors. The acute hazard index at the maximum exposed individual receptor was 0.0030, at receptor #14 on the southern boundary of the facility. Acute risk was due to benzene emissions. The associated target organ/system was the reproductive system.

Table G-3 and

Table H-3 of the Exhibits show the acute risk by substance and by emission source.

1.6.4 Population Exposure

As cancer risk did not exceed one per million at any receptor, cancer burden was not calculated.

2.0 HAZARD IDENTIFICATION

VOCs and hydrogen sulfide are emitted from storage tanks and from leaks in piping components (piping component fugitives). A complete list of specific substances emitted is provided in Table A-1 of the Exhibits. Annual and maximum hourly emission rates are provided in Exhibit C.

3.0 EXPOSURE ASSESSMENT

The exposure assessment includes air dispersion modeling, identification of exposure routes, and estimation of exposure levels. In a typical exposure assessment, the air dispersion modeling is used to estimate normalized ground level concentrations based on an emission rate of one gram per

second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance.

3.1 Facility Description

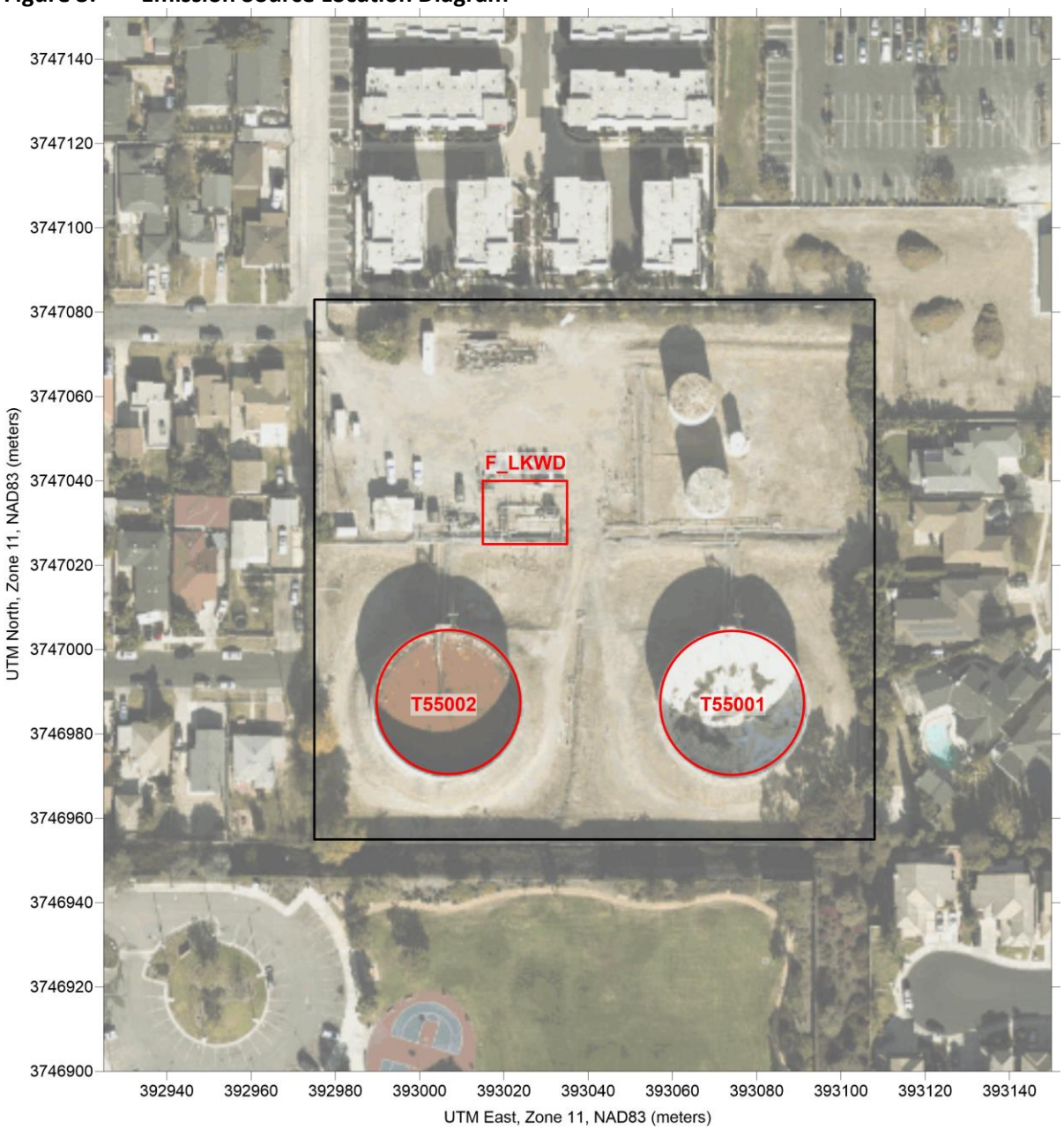
Paramount Petroleum Corporation (SCAQMD ID #037369) operates a petroleum storage and transfer facility in the city of Lakewood. The storage and blending equipment is currently idle but with the conversion of the Paramount Refinery about 3 miles north in the city of Paramount to a renewable fuels facility, existing storage and pipeline facilities will resume service for jet fuel storage and blending. The facility address is:

Paramount Petroleum Corporation
Lakewood Tank Farm
2922 E South St
Long Beach, CA 90723

The facility is located in a mixed industrial and residential urban area with residential neighborhoods immediately north, west, and east of the facility boundaries and a park to the south. The terrain surrounding the facility is relatively flat, with a gentle slope from north to south and no significant terrain features within about three miles of the facility boundaries.

Figure 3 below shows the facility boundaries as well as emission source locations.

Figure 3. Emission Source Location Diagram



3.2 Emissions Inventory

Toxic substances will be emitted from storage tanks and from leaking piping components at the facility. Figure 3, above, shows the location of the emission sources modeled. A description of the sources modeled and emission calculation methodology is provided in Table 2, below.

Table 2. Source ID and Description

Source	Source ID	Description
Storage Tanks	T55001, T55002	Storage tanks were modeled as AREACIRC sources using the actual radius and height of each tank.
Pipeline Component Fugitive Emissions	F_LKWD	Emissions from piping components were modeled as an area source located where the majority of the components are found, with a release height of 2 meters

For modeling purposes, all sources were assumed to operate 24 hours per day, 7 days per week, and 52 weeks per year. Source parameters are provided in Table B-1 and Table B-2 of the Exhibits. Emissions rates of each toxic substance are provided by source and for the entire facility in Table C-1 and Table C-2 of the Exhibits.

3.3 Air Dispersion Modeling

Dispersion modeling for this HRA was performed using AERMOD, v 21112. AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting cumulative concentrations from many point, area, and volume sources at numerous specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts in terrain ranging from flat to complex.

3.3.1 Meteorological data

The AERMOD-ready meteorological data sets for years 2012-2016 for the Long Beach, CA monitoring station were used for the analysis. These data sets were developed by SCAQMD using AERMET version 16216, the AERMOD meteorological data preprocessor, and provided for use in this analysis. The Long Beach meteorological station appears to be the most representative station to the Lakewood facility as it is in close proximity (approximately 3 miles south of the plant) and there are no intervening terrain features. A windrose showing a graphical distribution of wind speed and wind direction for the time period modeled is included as Figure D-1 of the Exhibits.

3.3.2 Model Options

AERMOD was run with the regulatory default modeling options.

3.3.3 Terrain Characterization

AERMOD requires that each source in the analysis be categorized as being in either a rural or an urban setting. Consistent with SCAQMD guidance[5], all sources were designated as urban. An urban population of 9,818,605 (Los Angeles County) was input to AERMOD.

Source and receptors were modeled with consideration of terrain elevations. The AERMOD terrain processor (AERMAP) was used to calculate terrain elevations for each source and receptor from the U.S. Geological Survey (USGS) National Elevation Dataset (NED). The terrain data is provided in electronic format to the City of Paramount Planning Department.

3.3.4 Receptors

Health effect indices such as cancer risk, chronic hazard index, and acute hazard index were calculated for a variety of receptor locations. Receptors of primary interest are those at residential locations, at sensitive population locations, and at offsite worker locations. However, in order to get a more complete picture of the patterns of exposure, concentrations and risk are also calculated at regularly spaced grid points throughout the modeling domain.

The receptors used to analyze project impacts include:

- 50-m spaced receptors from the facility boundary out to 500 meters
- 100-m spaced receptors from 500 meters to 1,000 meters from the facility boundary
- 20-m spaced receptors along the facility boundary

Receptor spacing was within SCAQMD modeling guidelines[6], which requires a fenceline spacing of 20 meters or less for facility areas less than 4 acres (Lakewood site is approximately 4 acres). Receptor heights above ground were set to 0.0 meters, consistent with SCAQMD modeling guidance. This network is composed of Cartesian (X,Y) receptors with Universal Transverse Mercator (UTM) coordinates. The modeling was conducted using the North American Datum of 1983 (NAD83).

Sensitive receptor locations (schools, parks, hospitals, etc.) were obtained via an internet search and the Google Maps database. The sensitive receptors used in the project analysis are listed in Table E-1 of the Exhibits.

Figure F-1 shows the model representation of fenceline, grid and sensitive receptors. A total of 1,026 fenceline and grid receptors were included in the analysis, plus an additional 11 sensitive receptors, for a total of 1,037 receptors.

[5] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

[6] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

3.3.5 Building Downwash

As no point sources were modeled in this analysis, building downwash was not considered.

3.3.6 Modeled Concentrations

The AERMOD output is the normalized ground level concentration at each receptor from each source based on an emission rate of one gram per second (χ/Q or Chi over Q). When AERMOD is run outside of HARP, HARP relies on a list of AERMOD "plotfiles" (files containing model results at each receptor for each source and averaging period) and annual and maximum hourly emission rates for each toxic substance by source. Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance.

4.0 RISK CHARACTERIZATION

As described above, the ground level concentrations of each toxic substance emitted are calculated by HARP. HARP analyzes this data to calculate cancer risk and non-cancer risks. HARP provides several analysis methods to perform these calculations; the methods chosen for this project follow SCAQMD guidance[7] and are shown in Table 3, below.

Table 3. Analysis Methods Used in Risk Modeling

Risk	Method
Residential cancer risk	RMP Using the Derived Method
Worker cancer risk	OEHHA Derived Method
Residential chronic and 8-hr chronic risk	OEHHA Derived Method
Worker chronic and 8-hr chronic risk	OEHHA Derived Method
Acute risk	Default/NA

As the entire modeling domain is an urban area, the exposure pathways chosen for this analysis were inhalation, home grown produce, dermal absorption, soil ingestion, and mother's milk for residential exposure and inhalation, dermal absorption, and soil ingestion for worker pathways. Pathways of fish ingestion, dairy milk ingestion, drinking water consumption, and meat ingestion were not used as the facility does not impact a local fishable body of water, grazing land, dairy, or water reservoir.

[7] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 8.

Per SCAQMD guidance for HARP modeling[8], a deposition velocity of 0.02 m/s was assumed for the non-inhalation pathways. Default values for all pathways were used with the exception of the dermal pathway which assumed a "warm" climate.

4.1 Carcinogens

The cancer health impacts are characterized as a cancer risk that represents the chances per million people of developing cancer. The cancer risk from each substance is added together to arrive at a total cancer risk. The exposure durations modeled in HARP followed OEHHA and SCAQMD guidance and are shown in Table 4, below.

Table 4. Exposure Durations

Risk type	Exposure Duration
Residential and sensitive receptor cancer risk[9]	24 hr/day, 350 day/yr, 30 years
Cancer burden	24 hr/day, 350 day/yr, 70 years
Worker cancer risk	8 hr/day, 250 day/yr, 25 years

4.1.1 Maximum Exposed Individual Resident (MEIR)

The highest cancer risk at a residential receptor was 0.23 per million, at a fenceline receptor (#28, also the PMI) on the northern boundary of the facility. As a residential neighborhood is located immediately adjacent to the fenceline, this receptor was considered a residential receptor. Risk was due to naphthalene (44.9%), benzene (35.2%), and ethyl benzene (19.9%). About half of the risk (59.7%) was from fugitive emissions from piping components with the remainder from Tank 55001 (27.2%) and Tank 55002 (13.1%).

The complete itemization of the contributions to cancer risk by substance and by source at the MEIR are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the MEIR. A contour map showing the 30-yr residential cancer risk was not generated as residential cancer was below one per million at all receptors.

4.1.2 Maximum Exposed Individual Worker (MEIW)

The highest calculated worker exposure cancer risk was 0.006 per million, at a church located about 100 meters north of the facility (receptor #393). Risk was due to benzene (60.9%), naphthalene (21.7%), and ethyl benzene (17.4%). Most of the risk was from storage tank emissions (53.7% from Tank 55002 and 30.7% from Tank 55001) with the remainder from piping component fugitives (15.6%).

[8] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 6.

[9] Sensitive receptors were conservatively treated as residential receptors in this analysis. This approach likely overestimates risk as it assumes 30 years of exposure.

The complete itemization of the contributions to cancer risk by substance and by source at the MEIW are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the MEIW. A contour map showing the 25-yr worker cancer risk was not generated as worker cancer was below one per million at all receptors.

4.1.3 Maximum Exposed Sensitive Receptor

The highest calculated cancer risk at a sensitive receptor was 0.12 per million, at Davenport Park (receptor #5) located immediately south of the facility. Risk was due to benzene (48.8%), naphthalene (32.6%), and ethyl benzene (18.6%). Risk was distributed fairly evenly among Tank 55001 (42.6%), piping component fugitives (36.4%), and Tank 55002 (21.0%).

The complete itemization of the contributions to cancer risk by substance and by source at the maximum exposed sensitive receptor are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the maximum exposed sensitive receptor.

Table 5, below provides a list of all sensitive receptors with a cancer risk above one per million.

Table 5. Cancer Risk at Sensitive Receptors

Sensitive Receptor Name	Receptor Number	UTM Coordinates (NAD83)		Increased Cancer Cases (in-one-million)
		Easting (m)	Northing (m)	
Davenport Park	5	393036	3746943	0.113
Lakewood Child Development Center	8	393921	3746425	0.025
Holmes Elementary School	7	393713	3746160	0.021
Biscailuz Park	6	392604	3746535	0.013
Mental Health Urgent Care Center	10	393064	3747770	0.012
Odyssey STEM Academy	4	393670	3746975	0.009
Buena Vista High School	2	393739	3746972	0.008
Cherry Cove Park	11	392234	3746194	0.006
St Pancratius School	1	393672	3747107	0.006
Lakewood Regional Medical Center	3	393735	3747189	0.005
Collins Elementary School	9	393673	3747868	0.003

4.1.4 Population Exposure and Cancer Burden

As cancer risk did not exceed one per million at any receptor, cancer burden was not calculated.

4.2 Non-Carcinogens

The non-cancer health impacts are characterized through a hazard index (HI). When more than one chemical is considered, it is assumed that the effects are additive provided the associated chemicals are expected to have an adverse impact on the same target organ system (respiratory system, liver, etc.). Thus, chemical-specific hazard indices are summed to arrive at a hazard index for each target organ. For any organ system, a total hazard index exceeding 1.0 indicates a potential health effect. Although the assumption of additivity of exposure to multiple chemicals ignores possible antagonistic or

synergistic interactions, this approach has been accepted by regulatory agencies as generally conservative.

4.2.1 Chronic HI

The chronic hazard index was well below one at all receptors. The chronic hazard index at the maximum exposed individual was 0.00044, at residential receptor #251 located about 100 meters southeast of the facility. Benzene contributed 100% of the chronic risk which was nearly all from the storage tanks (50.7% from Tank 55001 and 46.4% from Tank 55002). The associated target organ/system was the hematologic system.

The complete itemization of the contributions to chronic risk by substance and by source at the maximum receptor is provided in Table G-2 and Table H-2 of the Exhibits. Figure I-1 of the Exhibits shows the location of this receptor. As the chronic risk was below 0.5 at all receptors, no contour map was generated.

4.2.2 Acute HI

The acute hazard index was well below one at all receptors. The acute hazard index at the maximum exposed individual was 0.0030, at receptor #14 on the southern boundary of the facility. Benzene contributed 100% of the acute risk which was nearly all from the storage tanks (47.9% from Tank 55001 and 45.0% from Tank 55002). The associated target organ/system was the reproductive system (immunological and hematologic systems also showed the same risk).

The complete itemization of the contributions to chronic risk by substance and by source at the maximum receptor is provided in Table G-3 and

Table H-3 of the Exhibits. Figure I-1 of the Exhibits shows the location of these receptors. As the acute risk was below 0.5 at all receptors, no contour map was generated

5.0 CONCLUSION

The results of the HRA indicate that the project will not cause cancer risk greater than 10 per million at any receptor. Additionally, chronic and acute cancer risks from project emissions are below a hazard index of 1.0.

EXHIBIT A. SUBSTANCES EMITTED

Table A-1. Substances Emitted

CAS Number	Substance Name
95-63-6	1,2,4-Trimethylbenzene
71-43-2	Benzene
110-82-7	Cyclohexane
100-41-4	Ethyl benzene
7783-06-4	Hydrogen sulfide
78-79-5	Isoprene, except from vegetative emission sources
98-82-8	Cumene
91-20-3	Naphthalene
110-54-3	Hexane
108-88-3	Toluene
1330-20-7	Xylenes (mixed)

EXHIBIT B. SOURCE PARAMETERS

Table B-1. Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(Degrees)	(m)	(m)	(m)
Lakewood Tank Farm - Fugitives	F_LKWD	6.0	1.83	65.6	20.0	49.2	15	0.0	393015.0	3747025.0	16.15

Table B-2. Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
Lakewood Tank 55002	T55002	40.0	12.2	58.0	17.7	393074.0	3746985.7	16.42
Lakewood Tank 55001	T55001	40.0	12.2	58.0	17.7	393006.0	3746986.9	16.46

EXHIBIT C. EMISSION RATES

Table C-1. Post-Project Emission Rates by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
95-63-6	1,2,4-Trimethylbenzene	2.61E+01	3.76E-04	2.98E-03	3.76E-04
71-43-2	Benzene	3.28E+00	4.72E-05	3.74E-04	4.72E-05
110-82-7	Cyclohexane	7.39E+01	1.06E-03	8.44E-03	1.06E-03
100-41-4	Ethyl benzene	9.73E+00	1.40E-04	1.11E-03	1.40E-04
7783-06-4	Hydrogen sulfide	3.87E+00	5.57E-05	4.42E-04	5.57E-05
78-79-5	Isoprene, except from vegetative emission	9.50E+00	1.37E-04	1.08E-03	1.37E-04
98-82-8	Cumene	1.70E+00	2.45E-05	1.94E-04	2.45E-05
91-20-3	Naphthalene	7.26E-01	1.04E-05	8.29E-05	1.04E-05
110-54-3	Hexane	1.82E+00	2.61E-05	2.07E-04	2.61E-05
108-88-3	Toluene	5.80E+00	8.34E-05	6.62E-04	8.34E-05
1330-20-7	Xylenes (mixed)	2.66E+01	3.83E-04	3.04E-03	3.83E-04

Table C-2. Post-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
T55001	Lakewood Tank 55001	1,2,4-Trimethylbenzene	95-63-6	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Benzene	71-43-2	1.62E+00	2.33E-05	1.85E-04	2.33E-05
		Cyclohexane	110-82-7	3.65E+01	5.25E-04	4.16E-03	5.25E-04
		Ethyl benzene	100-41-4	4.39E+00	6.32E-05	5.01E-04	6.32E-05
		Hydrogen sulfide	7783-06-4	1.93E+00	2.78E-05	2.21E-04	2.78E-05
		Isoprene	78-79-5	4.74E+00	6.82E-05	5.41E-04	6.82E-05
		Cumene	98-82-8	7.23E-01	1.04E-05	8.25E-05	1.04E-05
		Naphthalene	91-20-3	2.61E-01	3.75E-06	2.98E-05	3.75E-06
		Hexane	110-54-3	9.00E-01	1.29E-05	1.03E-04	1.29E-05
		Toluene	108-88-3	2.78E+00	4.00E-05	3.17E-04	4.00E-05
		Xylenes (mixed)	1330-20-7	1.19E+01	1.71E-04	1.36E-03	1.71E-04
T55002	Lakewood Tank 55002	1,2,4-Trimethylbenzene	95-63-6	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Benzene	71-43-2	1.62E+00	2.33E-05	1.85E-04	2.33E-05
		Cyclohexane	110-82-7	3.65E+01	5.25E-04	4.16E-03	5.25E-04
		Ethyl benzene	100-41-4	4.39E+00	6.32E-05	5.01E-04	6.32E-05
		Hydrogen sulfide	7783-06-4	1.93E+00	2.78E-05	2.21E-04	2.78E-05
		Isoprene	78-79-5	4.74E+00	6.82E-05	5.41E-04	6.82E-05
		Cumene	98-82-8	7.23E-01	1.04E-05	8.25E-05	1.04E-05
		Naphthalene	91-20-3	2.61E-01	3.75E-06	2.98E-05	3.75E-06
		Hexane	110-54-3	9.00E-01	1.29E-05	1.03E-04	1.29E-05
		Toluene	108-88-3	2.78E+00	4.00E-05	3.17E-04	4.00E-05
		Xylenes (mixed)	1330-20-7	1.19E+01	1.71E-04	1.36E-03	1.71E-04
F_LKWD	Lakewood Tank Farm - Fugitives	1,2,4-Trimethylbenzene	95-63-6	5.43E+00	7.81E-05	6.20E-04	7.81E-05
		Benzene	71-43-2	4.33E-02	6.24E-07	4.95E-06	6.24E-07
		Cyclohexane	110-82-7	9.51E-01	1.37E-05	1.09E-04	1.37E-05
		Ethyl benzene	100-41-4	9.47E-01	1.36E-05	1.08E-04	1.36E-05
		Hydrogen sulfide	7783-06-4	3.08E-04	4.44E-09	3.52E-08	4.44E-09
		Isoprene	78-79-5	2.17E-02	3.12E-07	2.48E-06	3.12E-07

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cumene	98-82-8	2.56E-01	3.68E-06	2.92E-05	3.68E-06
		Naphthalene	91-20-3	2.04E-01	2.94E-06	2.33E-05	2.94E-06
		Hexane	110-54-3	1.52E-02	2.19E-07	1.74E-06	2.19E-07
		Toluene	108-88-3	2.36E-01	3.40E-06	2.70E-05	3.40E-06
		Xylenes (mixed)	1330-20-7	2.83E+00	4.07E-05	3.23E-04	4.07E-05

EXHIBIT D. WINDROSE

Figure D-1. Windrose

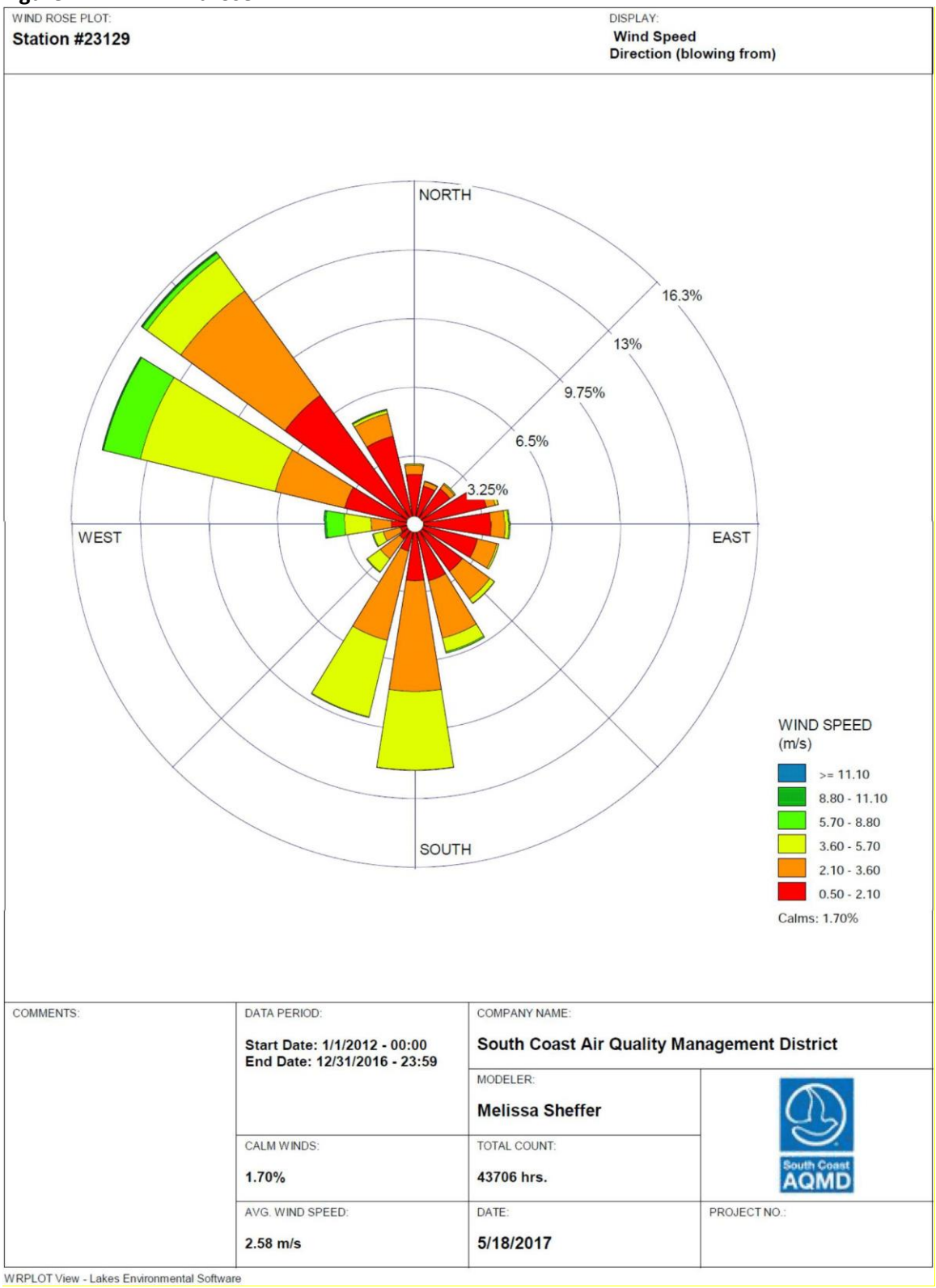


EXHIBIT E. SENSITIVE RECEPTORS

Table E-1. Description and Location of Sensitive Receptors

Description	Address	Rec. #	UTM Coordinates (NAD83) Easting/Northing (m)	(m)
Wirtz Elementary School	8535 Contreras St, Paramount, CA 90723	1	393649.1	3751859.0
Paramount High School	14429 Downey Ave, Paramount, CA 90723	2	393497.2	3751655.4
Albert Baxter Elementary School	14929 Cerritos Ave, Bellflower, CA 90706	3	394491.8	3751457.3
Jefferson Elementary School	8600 Jefferson St, Paramount, CA 90723	4	393779.4	3750835.8
Progress Park	15509 Naranja Ave, Paramount, CA 90723	5	393689.8	3750768.0
Alondra Middle School	16200 Downey Ave, Paramount, CA 90723	6	393718.3	3750251.0
Abraham Lincoln School	15324 California Ave, Paramount, CA 90723	7	392934.0	3751055.7
Paramount Park Middle School	14608 Paramount Blvd, Paramount, CA 90723	8	393067.0	3751689.4
Paramount Park	14400 Paramount Blvd, Paramount, CA 90723	9	392908.2	3751850.8
Roosevelt Elementary School	13451 Merkel Ave, Paramount, CA 90723	10	393023.6	3752726.1
Golden Park	8840 Golden St, Downey, CA 90242	11	393957.2	3752418.0
Kaiser Permanente Bellflower Medical Center	9400 Rosecrans Ave, Bellflower, CA 90706	12	395179.8	3751878.0

EXHIBIT F. RECEPTOR GRID DIAGRAMS

Figure F-1. All Receptor Locations

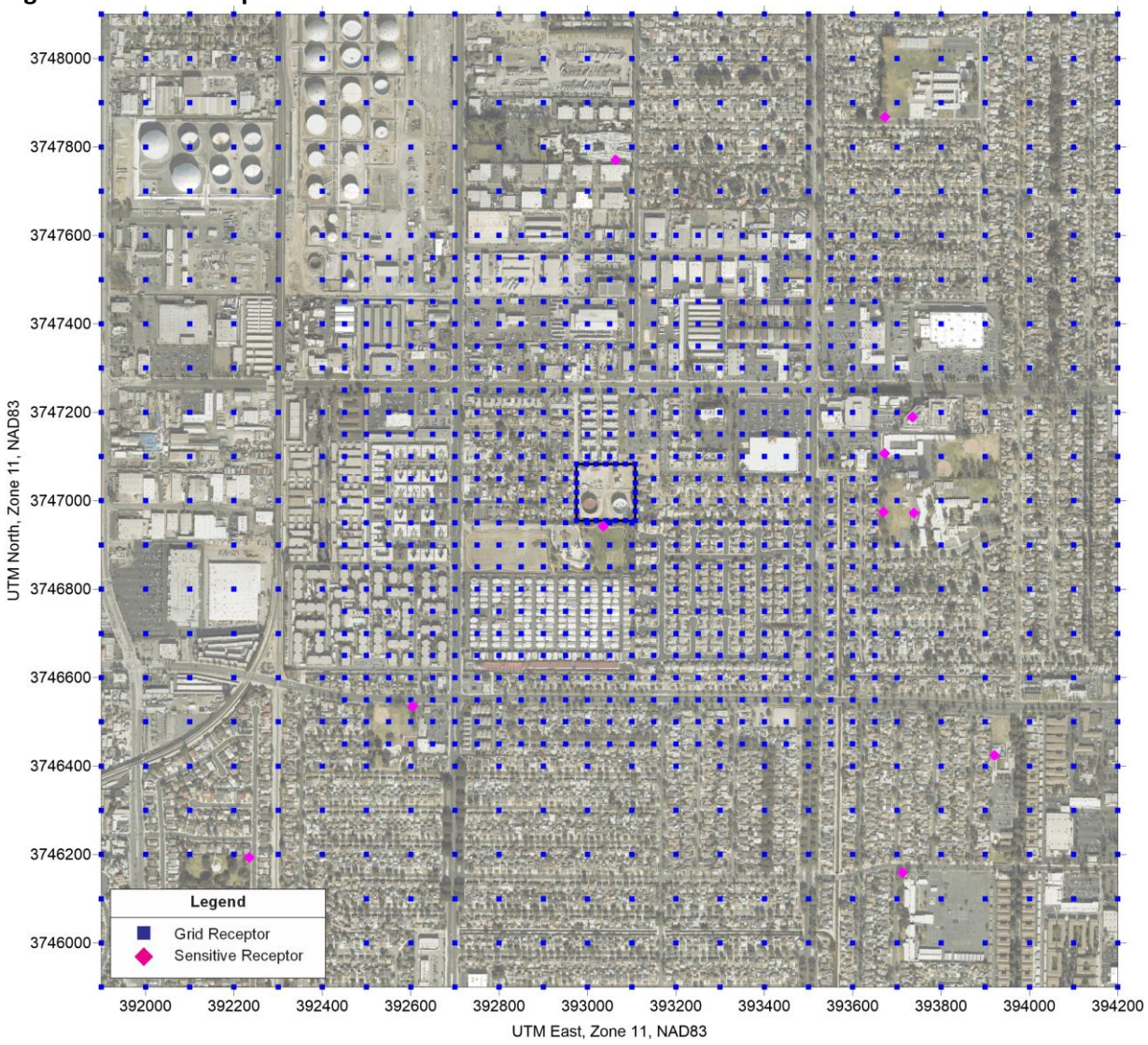


EXHIBIT G. RISK CONTRIBUTION BY SUBSTANCE

Table G-1. Cancer Risk by Substance at MEIR, MEIW, and Maximum Sensitive Receptors

Pollutant	CAS Number	MEIR		MEIW		Maximum Sensitive Receptor	
		Total risk	Fraction	Total risk	Fraction	Total risk	Fraction
Naphthalene	91-20-3	1.0E-07	44.9%	1.2E-09	21.7%	3.7E-08	32.6%
Benzene	71-43-2	8.2E-08	35.2%	3.4E-09	60.9%	5.5E-08	48.8%
Ethyl benzene	100-41-4	4.6E-08	19.9%	9.7E-10	17.4%	2.1E-08	18.6%
Total		**2.3E-07**	**100.0%**	**5.6E-09**	**100.0%**	**1.1E-07**	**100.0%**

Table G-2. Chronic Risk by Substance at the Maximum Exposed Individual Receptor [10]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		HI	Fraction
Benzene	71-43-2	0.00044	100.0%
Total		**0.00044**	**100.0%**

Table G-3. Acute Risk by Substance at the Maximum Exposed Individual Receptor [11]

Pollutant	CAS Number	c	
		Hazard Index	Fraction
Benzene	71-43-2	3.0E-03	99.9%
Total		**3.0E-03**	**100.0%**

[10] To calculate maximum chronic risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway with the highest chronic risk at the PMI and MEIW was the respiratory system. The pathway with the highest chronic risk at the MEIR and maximum sensitive receptor was the hematological system.

[11] To calculate maximum acute risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, three pathways had identical maximum acute risk - the reproductive system, the immunological system, and the hematologic system.

EXHIBIT H. RISK CONTRIBUTION BY SOURCE

Table H-1. Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Lakewood Tank Farm - Fugitives	F_LKWD	1.4E-07	59.7%	8.7E-10	15.6%	4.1E-08	36.4%
Lakewood Tank 55001	T55001	6.3E-08	27.2%	1.7E-09	30.7%	4.8E-08	42.6%
Lakewood Tank 55002	T55002	3.1E-08	13.1%	3.0E-09	53.7%	2.4E-08	21.0%
Total		**2.3E-07**	**100.0%**	**5.6E-09**	**100.0%**	**1.1E-07**	**100.0%**

Table H-2. Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Lakewood Tank 55001	T55001	2.3E-04	50.7%
Lakewood Tank 55002	T55002	2.1E-04	46.4%
Lakewood Tank Farm - Fugitives	F_LKWD	1.3E-05	2.9%
Total		**4.4E-04**	**100.0%**

Table H-3. Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Lakewood Tank 55001	T55001	1.4E-03	47.9%
Lakewood Tank 55002	T55002	1.3E-03	45.0%
Lakewood Tank Farm - Fugitives	F_LKWD	2.1E-04	7.1%
Total		**3.0E-03**	**100.0%**

EXHIBIT I. LOCATION OF MAXIMUM IMPACTED RECEPTORS

Figure I-1. Location of Maximum Impacted Receptors

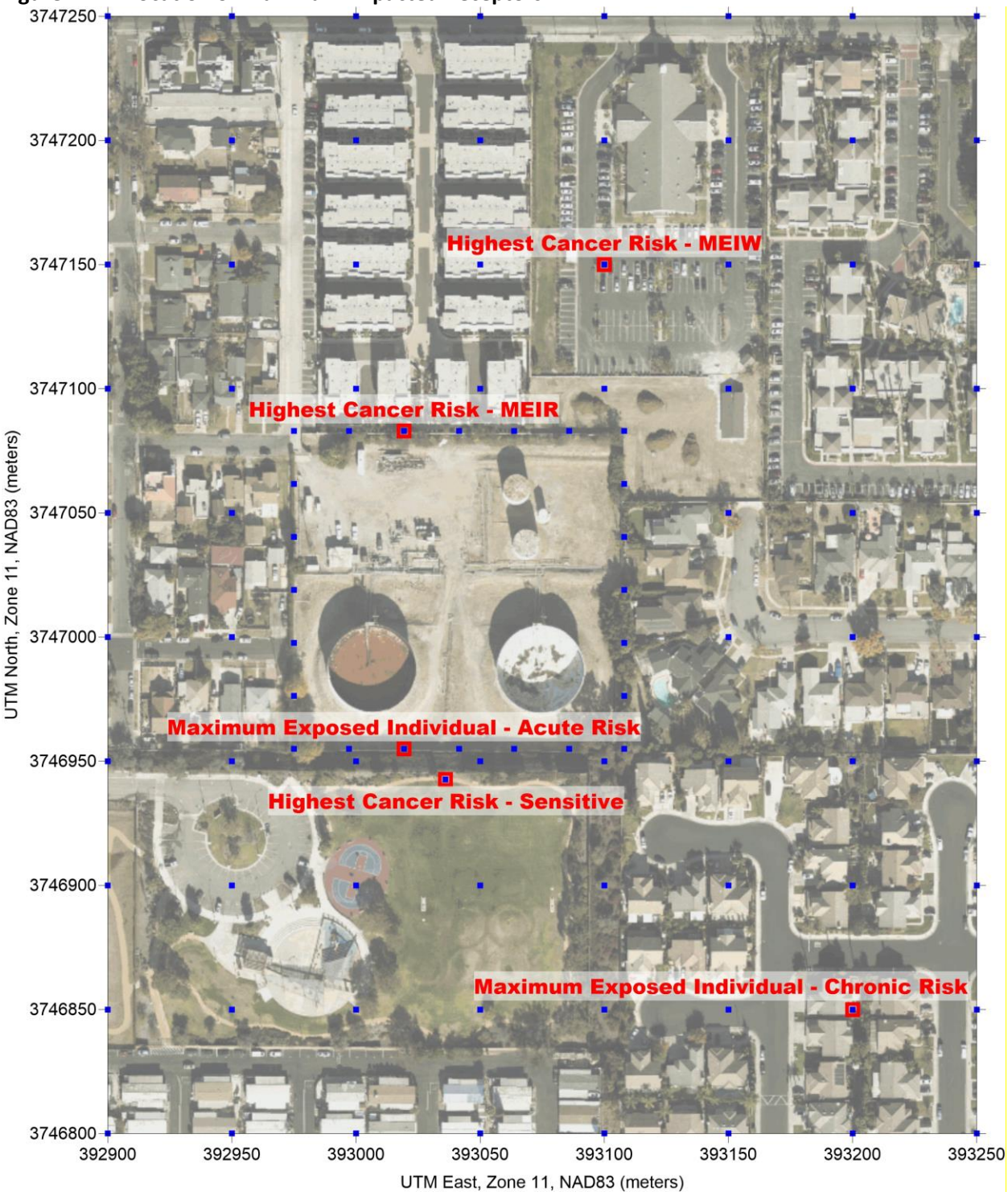


EXHIBIT J. DEFINITIONS AND ACRONYMNS

Definitions

Acute Health Effects – A health effect that occurs after a relatively short period of exposure (e.g., minutes or hours).

Cancer Burden – the estimated increase in the occurrence of cancer cases in a population subject to a maximum individual cancer risk (MICR) of greater than or equal to one in one million (1×10^{-6}) resulting from exposure to toxic air contaminants.

Carcinogenic Risk – A theoretical risk for getting cancer based on a lifetime exposure).

Chronic Health Effects – An adverse non-cancer health effect that develops and persists (e.g., months or years) over time after long-term exposure to a substance.

Dispersion Factor (X/Q) – A site-specific quantity defined as a ratio of the ground level concentration in air ($\mu g/m^3$) to the mass emission rate (g/s).

Exposure Pathway – A route of exposure by which foreign substances enter the human body (e.g., inhalation, ingestion, dermal absorption).

Health Risk Assessment – a technical study identifying toxic air contaminant emissions released from a facility, exposure assessment, dose-response assessment and risk characterization as outlined by the Office of Environmental Health Hazard Assessment (OEHHA) "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments" and the SCAQMD "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act".

Individual Substance Acute Hazard Index (HI) – the ratio of the estimated maximum one-hour, or other time period as specified by the Executive Officer, concentration of a toxic air contaminant at a receptor location to its acute reference exposure level.

Individual Substance Chronic Hazard Index (HI) – the ratio of the long-term level of exposure to a toxic air contaminant for a potential maximally exposed individual to the chronic reference exposure level for the toxic air contaminant.

Inhalation Unit Risk Factor – The theoretical upper bound probability of extra cancer cases occurring in the exposed population assuming a lifetime exposure to the chemical when the air concentration is expressed in exposure units of per microgram/cubic meter [$(\mu g/m3)^{-1}$]

Maximum Individual Cancer Risk (MICR) – the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants pursuant to the SCAQMD approved Risk Assessment Procedures. The MICR calculations include multi-pathway consideration, if applicable.

Receptor Location –

> (A) For the purpose of calculating acute HI, any location outside the boundaries of the facility at which a person could experience acute exposure; and

(B) For the purpose of calculating chronic HI, MICR, or cancer burden, any location outside the boundaries of the facility at which a person could experience chronic exposure.

Reference Exposure Level (REL) – the concentration level at or below which no adverse non-cancer health effects are anticipated for the specified exposure duration.

Sensitive Receptor – A location such as a hospital or daycare center where the human occupants are considered to be more sensitive to pollutants than "average".

Total Acute Hazard Index (HI) – the sum of the individual substance acute HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Total Chronic Hazard Index (HI) – the sum of the individual substance chronic HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Toxic Air Contaminant (TAC) – an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health as listed by OEHHA.

Acronyms

AB2588 – Assembly Bill 2588

AERMOD – American Meteorological Society/Environmental Protection Agency Regulatory Model

ARB – California Air Resources Board

CAS No. – Chemical Abstract Services Registry Number (CAS)

GLC – ground level concentration

HARP – Hot Spots Analysis and Reporting Program

HRA – health risk assessment

HI – hazard index

MEIR – maximum exposed individual resident

MEIW – maximum exposed individual worker

MICR – maximum individual cancer risk

$\mu g/m^3$ – microgram per cubic meter

OEHHA – Office of Environmental Health Hazard Assessment

REL – reference exposure level

SCAQMD – South Coast Air Quality Management District

UTM – Universal Transverse Mercator

EXHIBIT K. ELECTRONIC FILES

ATTACHMENT E. LAKEWOOD TANK FARM HEALTH RISK ASSESSMENT (HRA)

Paramount Petroleum Corporation
Lakewood Tank Farm
SCAQMD Facility ID 037369

Health Risk Assessment

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Prepared by:

Ashworth Leininger Group
601 East Daily Drive, Suite 302
Camarillo, California 93010
(805) 764-6010

In coordination with

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
(714) 632-8521

Prepared July 2021

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1.0 EXECUTIVE SUMMARY

AltAir Paramount, LLC, a wholly owned subsidiary of World Energy, proposes to complete the conversion of the Paramount Refinery in Paramount, California, to a Renewable Fuels Facility. In 2013, portions of the refinery were converted from processing crude oil and other petroleum products to renewable diesel, jet fuel, and naphtha production from renewable feedstocks like vegetable oils and tallow. The project will convert the remainder of the Paramount Refinery into a renewable fuels production facility. Modifications will also be made to the Lakewood Tank Farm, located about 3 miles south of the refinery. The Lakewood Tank Farm is currently idle[1] but existing storage and pipeline facilities will resume service for jet fuel storage and blending. A health risk assessment was prepared for the Lakewood Tank Farm future operations, to determine if the project has the potential to produce significant risks. The analysis determined that cancer, chronic, and acute risks are expected to be well below significance levels. The HRA was prepared in coordination with Environmental Audit, Inc.

1.1 Facility Information

The Paramount Lakewood Tank Farm consists of two 55,000 barrel petroleum floating roof storage tanks and a few smaller fixed roof tanks. The two floating roof tanks will be put in jet fuel service and tanks 5001 and 5002 will remain unchanged. Figures 1 and 2, below, show the facility location. The complete address is as follows:

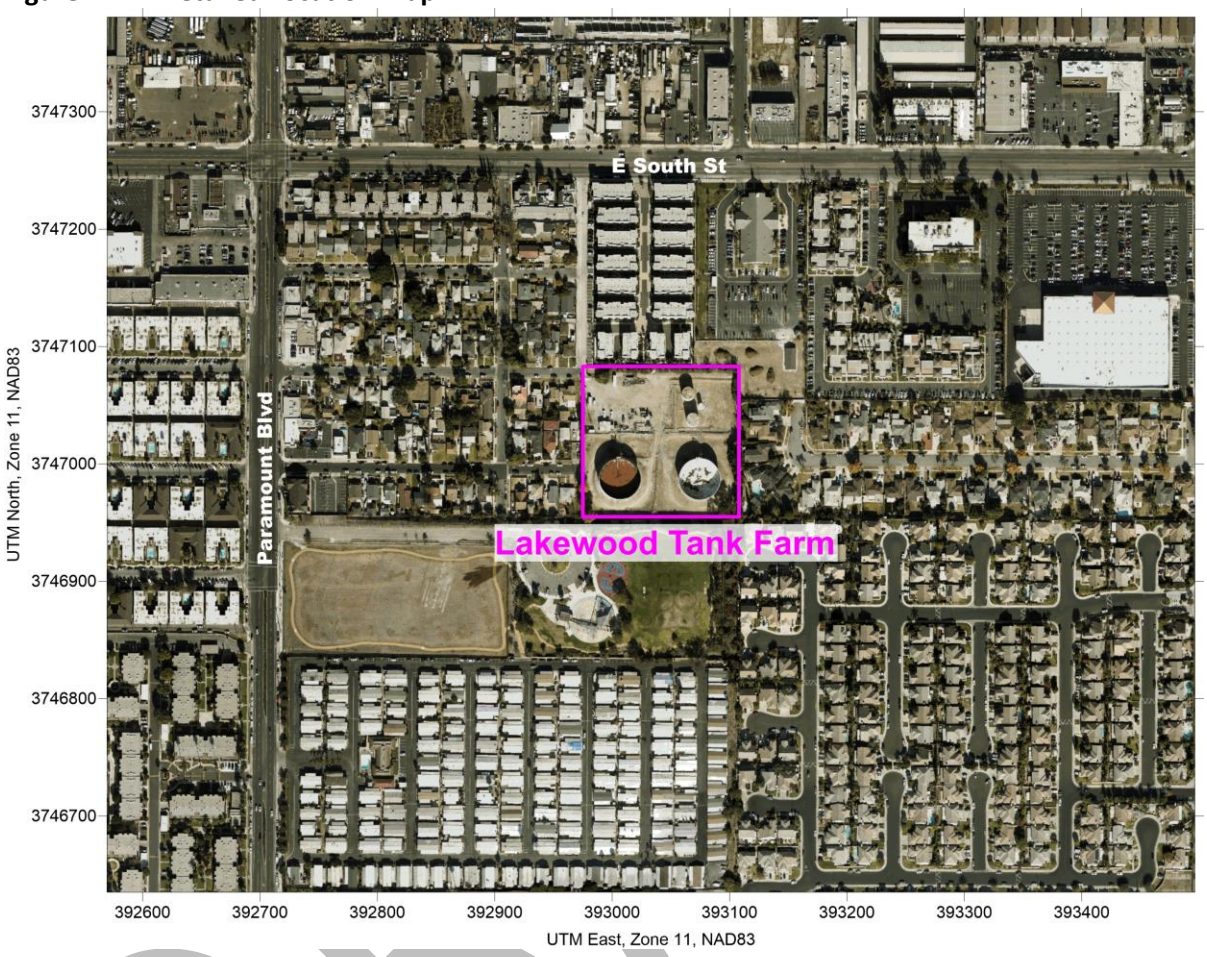
Paramount Petroleum Corporation
Lakewood Tank Farm
2922 E South St
Long Beach, CA 90723
SCAQMD Facility ID #037369

Figure 1. General Location Map



[1] Facility is idle except for a remediation system that is unaffected by this project.

Figure 2. Detailed Location Map



1.2 Substances Emitted

Emission sources included in this analysis at the Lakewood Tank Farm include two external floating roof storage tanks and fugitive emissions from piping components. Substances emitted, and their respective annual and maximum hourly emissions are shown in Table A-1, Table C-1 and Table C-2 of the Exhibits.

1.3 Pathways and Target Organs

All substances potentially emitted were evaluated for risk based on inhalation exposure. There will be no multi-pathway pollutants emitted at the Lakewood Tank Farm.

1.4 Dispersion Modeling and Exposure Assessment

This health risk assessment was performed following the SCAQMD and Office of Environmental Health Hazard Assessment (OEHHA) guidelines[2]. As recommended by these guidelines, the California Air Resources Board (CARB) Hotspots Analysis and Reporting Program (HARP, v 21081) was used to perform a refined health risk assessment for the project's emission sources. The AERMOD (v. 21112) air dispersion model was used for this analysis. HARP includes AERMOD but also allows model runs to be performed with AERMOD outside of HARP. For this project, AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis.

Source locations, dimensions, and operating parameters were entered into AERMOD to estimate normalized ground level concentrations from each source based on an emission rate of one gram per second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance. For this analysis, the dermal absorption, soil ingestion, mother's milk, and home grown produce ingestion pathways, along with inhalation, were considered to be viable exposure pathways for the area of impact.

1.5 Dose-Response Assessment

As described in the OEHHA risk assessment guidelines, the dose-response assessment describes the quantitative relationship between the amount of exposure of a person to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). For carcinogens, this information is quantified as a cancer potency slope. For non-carcinogens, dose-response information is characterized as a reference exposure level (REL).

1.5.1 Carcinogens

OEHHA has developed cancer potency factors for inhalation and non-inhalation pathways. The cancer potency factors represent an upper bound probability of developing cancer based on a continuous lifetime exposure to one milligram per kilogram of body weight of a substance. The cancer potency factor does not represent a threshold under which a person would not develop cancer but instead is used to estimate the probability of developing cancer. OEHHA regularly

[2] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018.

California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015.

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updates cancer potency factors as new information becomes available. This assessment is based on the latest health tables made available by OEHHA[3].

1.5.2 Non-Carcinogens

OEHHA has developed RELs for acute and chronic non-carcinogenic impacts. Unlike cancer potency factors, these RELs represent concentration thresholds at which no adverse non-cancer health effects are anticipated. Since a substance may affect multiple organs or endpoints, each substance may have multiple RELs to represent each toxicological endpoint. However, the REL for the most sensitive endpoint is used to ensure the REL considers the most adverse potential impacts. The chronic RELs are based on continuous exposure over a significant fraction of a lifetime. The acute RELs are typically based on a 1-hour exposure. Chronic RELs have been developed for inhalation and non-inhalation pathways while acute RELs have been developed only for the inhalation pathway. OEHHA regularly updates the RELs and this health risk assessment is based on the latest HARP health tables made available by OEHHA.

1.6 Summary of Results

The predicted health risks at maximally exposed offsite receptors are summarized by category in Table 1, below.

Table 1. Summary of Results

Location	Risk/HI Value	Receptor Number	UTM Coordinates (NAD83)	
			Easting (m)	Northing (m)
Cancer Risk (Per Million)				
Maximum exposed individual resident (MEIR)	0.23	28	393019	3747083
Maximum exposed individual worker (MEIW)[4]	0.0056	393	393100	3747150
Highest sensitive receptor	0.11	5	393036	3746943
Chronic Hazard Index				
Maximum exposed individual	0.00044	251	393200	3746850
Acute Hazard Index				
Point of maximum impact (PMI)	0.0030	14	393019	3746955

1.6.1 Cancer Risk

The highest cancer risk at a residential receptor was 0.23 per million, at receptor #28 on the northern boundary of the facility. Although the receptor is located on the fenceline, a residential neighborhood is located immediately adjacent to the fenceline, therefore the receptor was considered residential. The highest calculated worker exposure cancer risk was 0.0056 per million, at a church located about 100 meters north of the facility (receptor #393). The highest calculated

[3] The health database at the time of modeling was version 19252 (September 9, 2019).

[4] Onsite workers were not considered in this analysis; MEIW refers to the maximum exposed *offsite* worker.

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cancer risk at a sensitive receptor was 0.11 per million, at Davenport Park (receptor #5) located immediately south of the facility. Table 5 provides a list of the sensitive receptors and their respective cancer risk.

Cancer risk at each of these receptors was due to exposure to naphthalene, benzene, and ethyl benzene from the two storage tanks and associated piping components.

Table G-1 and Table H-1 of the Exhibits show the cancer risk by substance and by emission source. A map showing the location of the PMI, MEIR, and MEIW is included as Figure I-1 of the Exhibits. Contour maps were not generated as cancer risk was below one per million at all receptors.

1.6.2 Chronic Risk

The chronic hazard index was well below one at all receptors. The chronic hazard index at the maximum exposed individual receptor was 0.00044, at residential receptor #251 located about 100 meters southeast of the facility. Chronic risk was due to benzene emissions. The associated target organ/system was the hematologic system (blood).

Table G-2 and Table H-2 of the Exhibits show the chronic risk by substance and by emission source. As the maximum chronic risk was below 0.5 at all receptors, no contour map was generated.

1.6.3 Acute Risk

The acute hazard index was well below one at all receptors. The acute hazard index at the maximum exposed individual receptor was 0.0030, at receptor #14 on the southern boundary of the facility. Acute risk was due to benzene emissions. The associated target organ/system was the reproductive system.

Table G-3 and

Table H-3 of the Exhibits show the acute risk by substance and by emission source.

1.6.4 Population Exposure

As cancer risk did not exceed one per million at any receptor, cancer burden was not calculated.

2.0 HAZARD IDENTIFICATION

VOCs and hydrogen sulfide are emitted from storage tanks and from leaks in piping components (piping component fugitives). A complete list of specific substances emitted is provided in Table A-1 of the Exhibits. Annual and maximum hourly emission rates are provided in Exhibit C.

3.0 EXPOSURE ASSESSMENT

The exposure assessment includes air dispersion modeling, identification of exposure routes, and estimation of exposure levels. In a typical exposure assessment, the air dispersion modeling is used to estimate normalized ground level concentrations based on an emission rate of one gram per

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second (χ/Q or Chi over Q). Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance. Potential pathways of exposure to potential offsite receptors by each substance are identified (e.g., inhalation, dermal) and the appropriate algorithms are then used together with the χ/Q to estimate the concentration in air, soil, water, vegetation, and animals. The potential exposure levels to receptors are then estimated for each substance.

3.1 Facility Description

Paramount Petroleum Corporation (SCAQMD ID #037369) operates a petroleum storage and transfer facility in the city of Lakewood. The storage and blending equipment is currently idle but with the conversion of the Paramount Refinery about 3 miles north in the city of Paramount to a renewable fuels facility, existing storage and pipeline facilities will resume service for jet fuel storage and blending. The facility address is:

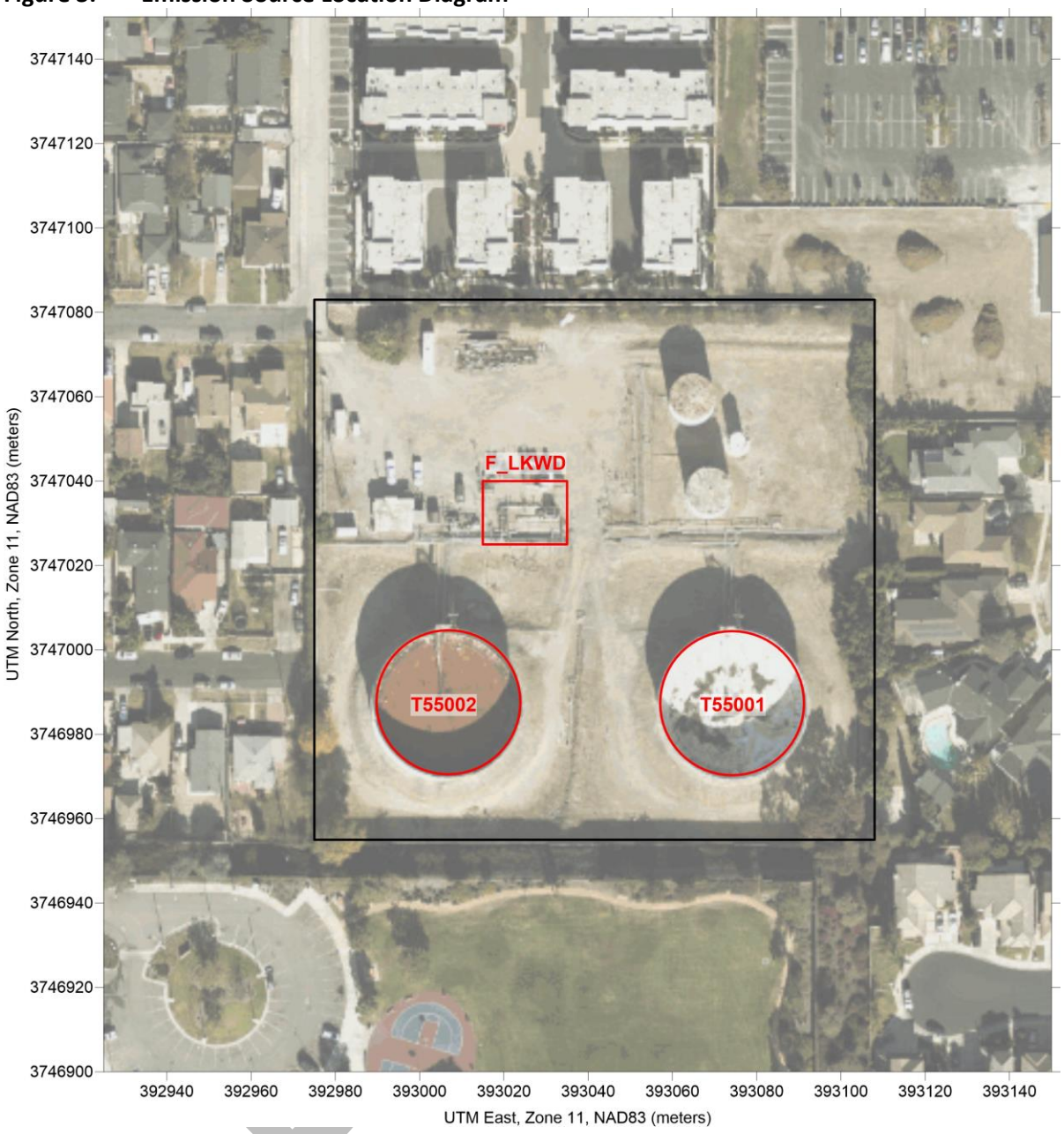
Paramount Petroleum Corporation
Lakewood Tank Farm
2922 E South St
Long Beach, CA 90723

The facility is located in a mixed industrial and residential urban area with residential neighborhoods immediately north, west, and east of the facility boundaries and a park to the south. The terrain surrounding the facility is relatively flat, with a gentle slope from north to south and no significant terrain features within about three miles of the facility boundaries.

Figure 3 below shows the facility boundaries as well as emission source locations.

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Figure 3. Emission Source Location Diagram



3.2 Emissions Inventory

Toxic substances will be emitted from storage tanks and from leaking piping components at the facility. Figure 3, above, shows the location of the emission sources modeled. A description of the sources modeled and emission calculation methodology is provided in Table 2, below.

Table 2. Source ID and Description

Source	Source ID	Description
Storage Tanks	T55001, T55002	Storage tanks were modeled as AREACIRC sources using the actual radius and height of each tank.
Pipeline Component Fugitive Emissions	F_LKWD	Emissions from piping components were modeled as an area source located where the majority of the components are found, with a release height of 2 meters

For modeling purposes, all sources were assumed to operate 24 hours per day, 7 days per week, and 52 weeks per year. Source parameters are provided in Table B-1 and Table B-2 of the Exhibits. Emissions rates of each toxic substance are provided by source and for the entire facility in Table C-1 and Table C-2 of the Exhibits.

3.3 Air Dispersion Modeling

Dispersion modeling for this HRA was performed using AERMOD, v 21112. AERMOD was run outside of HARP, and the results were imported into HARP to complete the risk analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting cumulative concentrations from many point, area, and volume sources at numerous specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts in terrain ranging from flat to complex.

3.3.1 Meteorological data

The AERMOD-ready meteorological data sets for years 2012-2016 for the Long Beach, CA monitoring station were used for the analysis. These data sets were developed by SCAQMD using AERMET version 16216, the AERMOD meteorological data preprocessor, and provided for use in this analysis. The Long Beach meteorological station appears to be the most representative station to the Lakewood facility as it is in close proximity (approximately 3 miles south of the plant) and there are no intervening terrain features. A windrose showing a graphical distribution of wind speed and wind direction for the time period modeled is included as Figure D-1 of the Exhibits.

3.3.2 Model Options

AERMOD was run with the regulatory default modeling options.

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3.3.3 Terrain Characterization

AERMOD requires that each source in the analysis be categorized as being in either a rural or an urban setting. Consistent with SCAQMD guidance[5], all sources were designated as urban. An urban population of 9,818,605 (Los Angeles County) was input to AERMOD.

Source and receptors were modeled with consideration of terrain elevations. The AERMOD terrain processor (AERMAP) was used to calculate terrain elevations for each source and receptor from the U.S. Geological Survey (USGS) National Elevation Dataset (NED). The terrain data is provided in electronic format to the City of Paramount Planning Department.

3.3.4 Receptors

Health effect indices such as cancer risk, chronic hazard index, and acute hazard index were calculated for a variety of receptor locations. Receptors of primary interest are those at residential locations, at sensitive population locations, and at offsite worker locations. However, in order to get a more complete picture of the patterns of exposure, concentrations and risk are also calculated at regularly spaced grid points throughout the modeling domain.

The receptors used to analyze project impacts include:

- 50-m spaced receptors from the facility boundary out to 500 meters
- 100-m spaced receptors from 500 meters to 1,000 meters from the facility boundary
- 20-m spaced receptors along the facility boundary

Receptor spacing was within SCAQMD modeling guidelines[6], which requires a fenceline spacing of 20 meters or less for facility areas less than 4 acres (Lakewood site is approximately 4 acres). Receptor heights above ground were set to 0.0 meters, consistent with SCAQMD modeling guidance. This network is composed of Cartesian (X,Y) receptors with Universal Transverse Mercator (UTM) coordinates. The modeling was conducted using the North American Datum of 1983 (NAD83).

Sensitive receptor locations (schools, parks, hospitals, etc.) were obtained via an internet search and the Google Maps database. The sensitive receptors used in the project analysis are listed in Table E-1 of the Exhibits.

Figure F-1 shows the model representation of fenceline, grid and sensitive receptors. A total of 1,026 fenceline and grid receptors were included in the analysis, plus an additional 11 sensitive receptors, for a total of 1,037 receptors.

[5] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

[6] SCAQMD Modeling Guidance for AERMOD http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance (accessed October 7, 2020).

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3.3.5 Building Downwash

As no point sources were modeled in this analysis, building downwash was not considered.

3.3.6 Modeled Concentrations

The AERMOD output is the normalized ground level concentration at each receptor from each source based on an emission rate of one gram per second (χ/Q or Chi over Q). When AERMOD is run outside of HARP, HARP relies on a list of AERMOD "plotfiles" (files containing model results at each receptor for each source and averaging period) and annual and maximum hourly emission rates for each toxic substance by source. Since ambient concentration is directly related to emission rate, the χ/Q is then multiplied in HARP by the emission rate for each substance to obtain a ground level concentration (GLC) resulting from each substance.

4.0 RISK CHARACTERIZATION

As described above, the ground level concentrations of each toxic substance emitted are calculated by HARP. HARP analyzes this data to calculate cancer risk and non-cancer risks. HARP provides several analysis methods to perform these calculations; the methods chosen for this project follow SCAQMD guidance[7] and are shown in Table 3, below.

Table 3. Analysis Methods Used in Risk Modeling

Risk	Method
Residential cancer risk	RMP Using the Derived Method
Worker cancer risk	OEHHA Derived Method
Residential chronic and 8-hr chronic risk	OEHHA Derived Method
Worker chronic and 8-hr chronic risk	OEHHA Derived Method
Acute risk	Default/NA

As the entire modeling domain is an urban area, the exposure pathways chosen for this analysis were inhalation, home grown produce, dermal absorption, soil ingestion, and mother's milk for residential exposure and inhalation, dermal absorption, and soil ingestion for worker pathways. Pathways of fish ingestion, dairy milk ingestion, drinking water consumption, and meat ingestion were not used as the facility does not impact a local fishable body of water, grazing land, dairy, or water reservoir.

[7] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 8.

Per SCAQMD guidance for HARP modeling[8], a deposition velocity of 0.02 m/s was assumed for the non-inhalation pathways. Default values for all pathways were used with the exception of the dermal pathway which assumed a "warm" climate.

4.1 Carcinogens

The cancer health impacts are characterized as a cancer risk that represents the chances per million people of developing cancer. The cancer risk from each substance is added together to arrive at a total cancer risk. The exposure durations modeled in HARP followed OEHHA and SCAQMD guidance and are shown in Table 4, below.

Table 4. Exposure Durations

Risk type	Exposure Duration
Residential and sensitive receptor cancer risk[9]	24 hr/day, 350 day/yr, 30 years
Cancer burden	24 hr/day, 350 day/yr, 70 years
Worker cancer risk	8 hr/day, 250 day/yr, 25 years

4.1.1 Maximum Exposed Individual Resident (MEIR)

The highest cancer risk at a residential receptor was 0.23 per million, at a fenceline receptor (#28, also the PMI) on the northern boundary of the facility. As a residential neighborhood is located immediately adjacent to the fenceline, this receptor was considered a residential receptor. Risk was due to naphthalene (44.9%), benzene (35.2%), and ethyl benzene (19.9%). About half of the risk (59.7%) was from fugitive emissions from piping components with the remainder from Tank 55001 (27.2%) and Tank 55002 (13.1%).

The complete itemization of the contributions to cancer risk by substance and by source at the MEIR are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the MEIR. A contour map showing the 30-yr residential cancer risk was not generated as residential cancer was below one per million at all receptors.

4.1.2 Maximum Exposed Individual Worker (MEIW)

The highest calculated worker exposure cancer risk was 0.006 per million, at a church located about 100 meters north of the facility (receptor #393). Risk was due to benzene (60.9%), naphthalene (21.7%), and ethyl benzene (17.4%). Most of the risk was from storage tank emissions (53.7% from Tank 55002 and 30.7% from Tank 55001) with the remainder from piping component fugitives (15.6%).

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[8] South Coast Air Quality Management District, AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act), July 2018, Table 6.

[9] Sensitive receptors were conservatively treated as residential receptors in this analysis. This approach likely overestimates risk as it assumes 30 years of exposure.

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The complete itemization of the contributions to cancer risk by substance and by source at the MEIW are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the MEIW. A contour map showing the 25-yr worker cancer risk was not generated as worker cancer was below one per million at all receptors.

4.1.3 Maximum Exposed Sensitive Receptor

The highest calculated cancer risk at a sensitive receptor was 0.12 per million, at Davenport Park (receptor #5) located immediately south of the facility. Risk was due to benzene (48.8%), naphthalene (32.6%), and ethyl benzene (18.6%). Risk was distributed fairly evenly among Tank 55001 (42.6%), piping component fugitives (36.4%), and Tank 55002 (21.0%).

The complete itemization of the contributions to cancer risk by substance and by source at the maximum exposed sensitive receptor are provided in Table G-1 and Table H-1 of the Exhibits. Figure I-1 of the Exhibits shows the location of the maximum exposed sensitive receptor.

Table 5, below provides a list of all sensitive receptors with a cancer risk above one per million.

Table 5. Cancer Risk at Sensitive Receptors

Sensitive Receptor Name	Receptor Number	UTM Coordinates (NAD83)		Increased Cancer Cases (in-one-million)
		Easting (m)	Northing (m)	
Davenport Park	5	393036	3746943	0.113
Lakewood Child Development Center	8	393921	3746425	0.025
Holmes Elementary School	7	393713	3746160	0.021
Biscailuz Park	6	392604	3746535	0.013
Mental Health Urgent Care Center	10	393064	3747770	0.012
Odyssey STEM Academy	4	393670	3746975	0.009
Buena Vista High School	2	393739	3746972	0.008
Cherry Cove Park	11	392234	3746194	0.006
St Pancratius School	1	393672	3747107	0.006
Lakewood Regional Medical Center	3	393735	3747189	0.005
Collins Elementary School	9	393673	3747868	0.003

4.1.4 Population Exposure and Cancer Burden

As cancer risk did not exceed one per million at any receptor, cancer burden was not calculated.

4.2 Non-Carcinogens

The non-cancer health impacts are characterized through a hazard index (HI). When more than one chemical is considered, it is assumed that the effects are additive provided the associated chemicals are expected to have an adverse impact on the same target organ system (respiratory system, liver, etc.). Thus, chemical-specific hazard indices are summed to arrive at a hazard index for each target organ. For any organ system, a total hazard index exceeding 1.0 indicates a potential health effect. Although the assumption of additivity of exposure to multiple chemicals ignores possible antagonistic or

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synergistic interactions, this approach has been accepted by regulatory agencies as generally conservative.

4.2.1 Chronic HI

The chronic hazard index was well below one at all receptors. The chronic hazard index at the maximum exposed individual was 0.00044, at residential receptor #251 located about 100 meters southeast of the facility. Benzene contributed 100% of the chronic risk which was nearly all from the storage tanks (50.7% from Tank 55001 and 46.4% from Tank 55002). The associated target organ/system was the hematologic system.

The complete itemization of the contributions to chronic risk by substance and by source at the maximum receptor is provided in Table G-2 and Table H-2 of the Exhibits. Figure I-1 of the Exhibits shows the location of this receptor. As the chronic risk was below 0.5 at all receptors, no contour map was generated.

4.2.2 Acute HI

The acute hazard index was well below one at all receptors. The acute hazard index at the maximum exposed individual was 0.0030, at receptor #14 on the southern boundary of the facility. Benzene contributed 100% of the acute risk which was nearly all from the storage tanks (47.9% from Tank 55001 and 45.0% from Tank 55002). The associated target organ/system was the reproductive system (immunological and hematologic systems also showed the same risk).

The complete itemization of the contributions to chronic risk by substance and by source at the maximum receptor is provided in Table G-3 and

Table H-3 of the Exhibits. Figure I-1 of the Exhibits shows the location of these receptors. As the acute risk was below 0.5 at all receptors, no contour map was generated

5.0 CONCLUSION

The results of the HRA indicate that the project will not cause cancer risk greater than 10 per million at any receptor. Additionally, chronic and acute cancer risks from project emissions are below a hazard index of 1.0.

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EXHIBIT A. SUBSTANCES EMITTED

Table A-1. Substances Emitted

CAS Number	Substance Name
95-63-6	1,2,4-Trimethylbenzene
71-43-2	Benzene
110-82-7	Cyclohexane
100-41-4	Ethyl benzene
7783-06-4	Hydrogen sulfide
78-79-5	Isoprene, except from vegetative emission sources
98-82-8	Cumene
91-20-3	Naphthalene
110-54-3	Hexane
108-88-3	Toluene
1330-20-7	Xylenes (mixed)

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EXHIBIT B. SOURCE PARAMETERS

Table B-1. Project AREA Source Parameters

Source Description	Model ID	Release Height		Easterly Length		Northerly Length		Angle from North	UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(Degrees)	(m)	(m)	(m)
Lakewood Tank Farm - Fugitives	F_LKWD	6.0	1.83	65.6	20.0	49.2	15	0.0	393015.0	3747025.0	16.15

Table B-2. Project AREACIRC Source Parameters

Source Description	Model ID	Release Height		Radius of Circle		UTM Coordinates Easting/ Northing		Base Elevation
		(ft)	(m)	(ft)	(m)	(m)	(m)	(m)
Lakewood Tank 55002	T55002	40.0	12.2	58.0	17.7	393074.0	3746985.7	16.42
Lakewood Tank 55001	T55001	40.0	12.2	58.0	17.7	393006.0	3746986.9	16.46

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EXHIBIT C. EMISSION RATES

Table C-1. Post-Project Emission Rates by Substance

CAS Number	Substance Name	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
		lb/yr	g/s	lb/hr	g/s
95-63-6	1,2,4-Trimethylbenzene	2.61E+01	3.76E-04	2.98E-03	3.76E-04
71-43-2	Benzene	3.28E+00	4.72E-05	3.74E-04	4.72E-05
110-82-7	Cyclohexane	7.39E+01	1.06E-03	8.44E-03	1.06E-03
100-41-4	Ethyl benzene	9.73E+00	1.40E-04	1.11E-03	1.40E-04
7783-06-4	Hydrogen sulfide	3.87E+00	5.57E-05	4.42E-04	5.57E-05
78-79-5	Isoprene, except from vegetative emission	9.50E+00	1.37E-04	1.08E-03	1.37E-04
98-82-8	Cumene	1.70E+00	2.45E-05	1.94E-04	2.45E-05
91-20-3	Naphthalene	7.26E-01	1.04E-05	8.29E-05	1.04E-05
110-54-3	Hexane	1.82E+00	2.61E-05	2.07E-04	2.61E-05
108-88-3	Toluene	5.80E+00	8.34E-05	6.62E-04	8.34E-05
1330-20-7	Xylenes (mixed)	2.66E+01	3.83E-04	3.04E-03	3.83E-04

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Table C-2. Post-Project Emission Rates by Source

Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
T55001	Lakewood Tank 55001	1,2,4-Trimethylbenzene	95-63-6	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Benzene	71-43-2	1.62E+00	2.33E-05	1.85E-04	2.33E-05
		Cyclohexane	110-82-7	3.65E+01	5.25E-04	4.16E-03	5.25E-04
		Ethyl benzene	100-41-4	4.39E+00	6.32E-05	5.01E-04	6.32E-05
		Hydrogen sulfide	7783-06-4	1.93E+00	2.78E-05	2.21E-04	2.78E-05
		Isoprene	78-79-5	4.74E+00	6.82E-05	5.41E-04	6.82E-05
		Cumene	98-82-8	7.23E-01	1.04E-05	8.25E-05	1.04E-05
		Naphthalene	91-20-3	2.61E-01	3.75E-06	2.98E-05	3.75E-06
		Hexane	110-54-3	9.00E-01	1.29E-05	1.03E-04	1.29E-05
		Toluene	108-88-3	2.78E+00	4.00E-05	3.17E-04	4.00E-05
		Xylenes (mixed)	1330-20-7	1.19E+01	1.71E-04	1.36E-03	1.71E-04
T55002	Lakewood Tank 55002	1,2,4-Trimethylbenzene	95-63-6	1.04E+01	1.49E-04	1.18E-03	1.49E-04
		Benzene	71-43-2	1.62E+00	2.33E-05	1.85E-04	2.33E-05
		Cyclohexane	110-82-7	3.65E+01	5.25E-04	4.16E-03	5.25E-04
		Ethyl benzene	100-41-4	4.39E+00	6.32E-05	5.01E-04	6.32E-05
		Hydrogen sulfide	7783-06-4	1.93E+00	2.78E-05	2.21E-04	2.78E-05
		Isoprene	78-79-5	4.74E+00	6.82E-05	5.41E-04	6.82E-05
		Cumene	98-82-8	7.23E-01	1.04E-05	8.25E-05	1.04E-05
		Naphthalene	91-20-3	2.61E-01	3.75E-06	2.98E-05	3.75E-06
		Hexane	110-54-3	9.00E-01	1.29E-05	1.03E-04	1.29E-05
		Toluene	108-88-3	2.78E+00	4.00E-05	3.17E-04	4.00E-05
		Xylenes (mixed)	1330-20-7	1.19E+01	1.71E-04	1.36E-03	1.71E-04
F_LKWD	Lakewood Tank Farm - Fugitives	1,2,4-Trimethylbenzene	95-63-6	5.43E+00	7.81E-05	6.20E-04	7.81E-05
		Benzene	71-43-2	4.33E-02	6.24E-07	4.95E-06	6.24E-07
		Cyclohexane	110-82-7	9.51E-01	1.37E-05	1.09E-04	1.37E-05
		Ethyl benzene	100-41-4	9.47E-01	1.36E-05	1.08E-04	1.36E-05
		Hydrogen sulfide	7783-06-4	3.08E-04	4.44E-09	3.52E-08	4.44E-09
		Isoprene	78-79-5	2.17E-02	3.12E-07	2.48E-06	3.12E-07

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Source ID	Source Description	Substance Name	CAS Number	Annual Average Emission Rate		Maximum 1-Hr Emission Rate	
				lb/yr	g/s	lb/hr	g/s
		Cumene	98-82-8	2.56E-01	3.68E-06	2.92E-05	3.68E-06
		Naphthalene	91-20-3	2.04E-01	2.94E-06	2.33E-05	2.94E-06
		Hexane	110-54-3	1.52E-02	2.19E-07	1.74E-06	2.19E-07
		Toluene	108-88-3	2.36E-01	3.40E-06	2.70E-05	3.40E-06
		Xylenes (mixed)	1330-20-7	2.83E+00	4.07E-05	3.23E-04	4.07E-05

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EXHIBIT D. WINDROSE

Figure D-1. Windrose

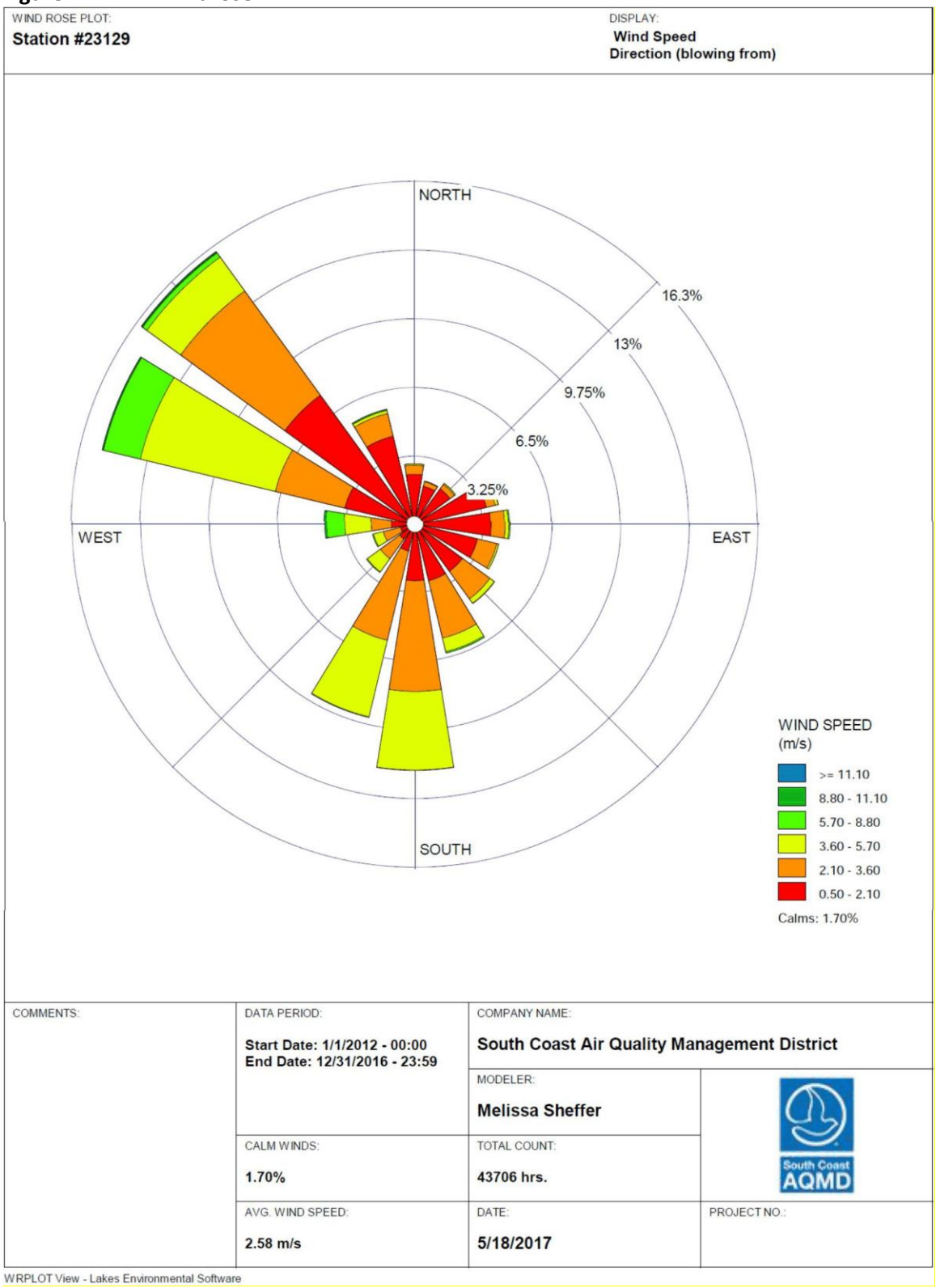


EXHIBIT E. SENSITIVE RECEPTORS

Table E-1. Description and Location of Sensitive Receptors

Description	Address	Rec. #	UTM Coordinates (NAD83) Easting/Northing (m)	(m)
Wirtz Elementary School	8535 Contreras St, Paramount, CA 90723	1	393649.1	3751859.0
Paramount High School	14429 Downey Ave, Paramount, CA 90723	2	393497.2	3751655.4
Albert Baxter Elementary School	14929 Cerritos Ave, Bellflower, CA 90706	3	394491.8	3751457.3
Jefferson Elementary School	8600 Jefferson St, Paramount, CA 90723	4	393779.4	3750835.8
Progress Park	15509 Naranja Ave, Paramount, CA 90723	5	393689.8	3750768.0
Alondra Middle School	16200 Downey Ave, Paramount, CA 90723	6	393718.3	3750251.0
Abraham Lincoln School	15324 California Ave, Paramount, CA 90723	7	392934.0	3751055.7
Paramount Park Middle School	14608 Paramount Blvd, Paramount, CA 90723	8	393067.0	3751689.4
Paramount Park	14400 Paramount Blvd, Paramount, CA 90723	9	392908.2	3751850.8
Roosevelt Elementary School	13451 Merkel Ave, Paramount, CA 90723	10	393023.6	3752726.1
Golden Park	8840 Golden St, Downey, CA 90242	11	393957.2	3752418.0
Kaiser Permanente Bellflower Medical Center	9400 Rosecrans Ave, Bellflower, CA 90706	12	395179.8	3751878.0

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EXHIBIT F. RECEPTOR GRID DIAGRAMS

Figure F-1. All Receptor Locations

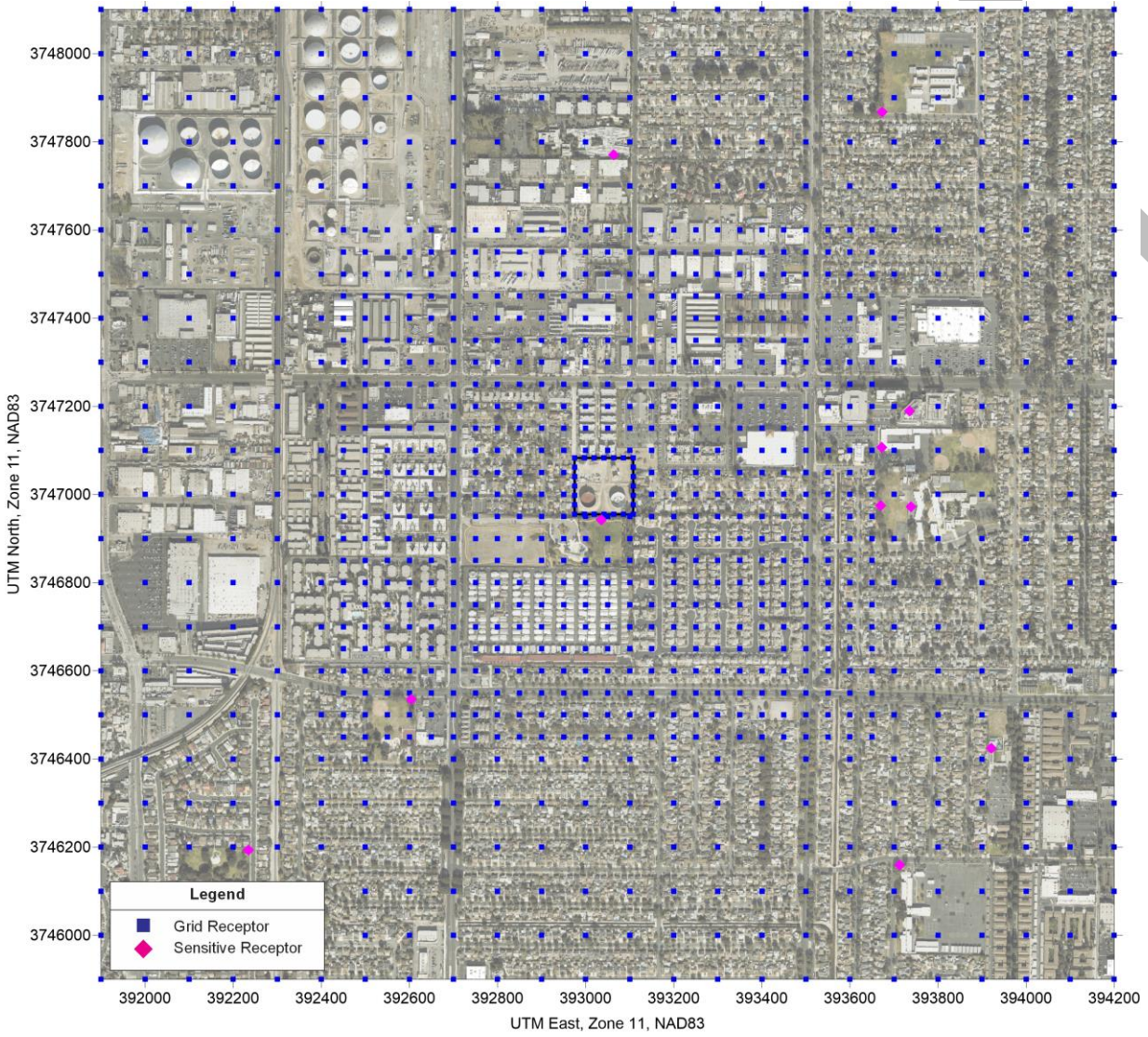


EXHIBIT G. RISK CONTRIBUTION BY SUBSTANCE

Table G-1. Cancer Risk by Substance at MEIR, MEIW, and Maximum Sensitive Receptors

Pollutant	CAS Number	MEIR		MEIW		Maximum Sensitive Receptor	
		Total risk	Fraction	Total risk	Fraction	Total risk	Fraction
Naphthalene	91-20-3	1.0E-07	44.9%	1.2E-09	21.7%	3.7E-08	32.6%
Benzene	71-43-2	8.2E-08	35.2%	3.4E-09	60.9%	5.5E-08	48.8%
Ethyl benzene	100-41-4	4.6E-08	19.9%	9.7E-10	17.4%	2.1E-08	18.6%
Total		**2.3E-07**	**100.0%**	**5.6E-09**	**100.0%**	**1.1E-07**	**100.0%**

Table G-2. Chronic Risk by Substance at the Maximum Exposed Individual Receptor [10]

Pollutant	CAS Number	Maximum Exposed Individual Receptor	
		HI	Fraction
Benzene	71-43-2	0.00044	100.0%
Total		**0.00044**	**100.0%**

Table G-3. Acute Risk by Substance at the Maximum Exposed Individual Receptor [11]

Pollutant	CAS Number	c	
		Hazard Index	Fraction
Benzene	71-43-2	3.0E-03	99.9%
Total		**3.0E-03**	**100.0%**

[10] To calculate maximum chronic risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, the pathway with the highest chronic risk at the PMI and MEIW was the respiratory system. The pathway with the highest chronic risk at the MEIR and maximum sensitive receptor was the hematological system.

[11] To calculate maximum acute risk, HARP determines risk from all chemicals for all pathways, and the pathway with the highest total is considered the maximum. If a chemical contributes risk to one or more pathways but does not affect the pathway with the highest risk, it is not listed in this table. For this project, three pathways had identical maximum acute risk - the reproductive system, the immunological system, and the hematologic system.

EXHIBIT H. RISK CONTRIBUTION BY SOURCE

Table H-1. Cancer Risk by Source at MEIR, MEIW, and Maximum Sensitive Receptors

Source Description	Source ID	MEIR		MEIW		Maximum Sensitive Receptor	
		Total Risk	Fraction	Total Risk	Fraction	Total Risk	Fraction
Lakewood Tank Farm - Fugitives	F_LKWD	1.4E-07	59.7%	8.7E-10	15.6%	4.1E-08	36.4%
Lakewood Tank 55001	T55001	6.3E-08	27.2%	1.7E-09	30.7%	4.8E-08	42.6%
Lakewood Tank 55002	T55002	3.1E-08	13.1%	3.0E-09	53.7%	2.4E-08	21.0%
Total		**2.3E-07**	**100.0%**	**5.6E-09**	**100.0%**	**1.1E-07**	**100.0%**

Table H-2. Chronic Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Lakewood Tank 55001	T55001	2.3E-04	50.7%
Lakewood Tank 55002	T55002	2.1E-04	46.4%
Lakewood Tank Farm - Fugitives	F_LKWD	1.3E-05	2.9%
Total		**4.4E-04**	**100.0%**

Table H-3. Acute Risk by Source at the Maximum Exposed Individual Receptor

Source Description	Source ID	Maximum Exposed Individual Receptor	
		Hazard Index	Fraction
Lakewood Tank 55001	T55001	1.4E-03	47.9%
Lakewood Tank 55002	T55002	1.3E-03	45.0%
Lakewood Tank Farm - Fugitives	F_LKWD	2.1E-04	7.1%
Total		**3.0E-03**	**100.0%**

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EXHIBIT I. LOCATION OF MAXIMUM IMPACTED RECEPTORS

Figure I-1. Location of Maximum Impacted Receptors

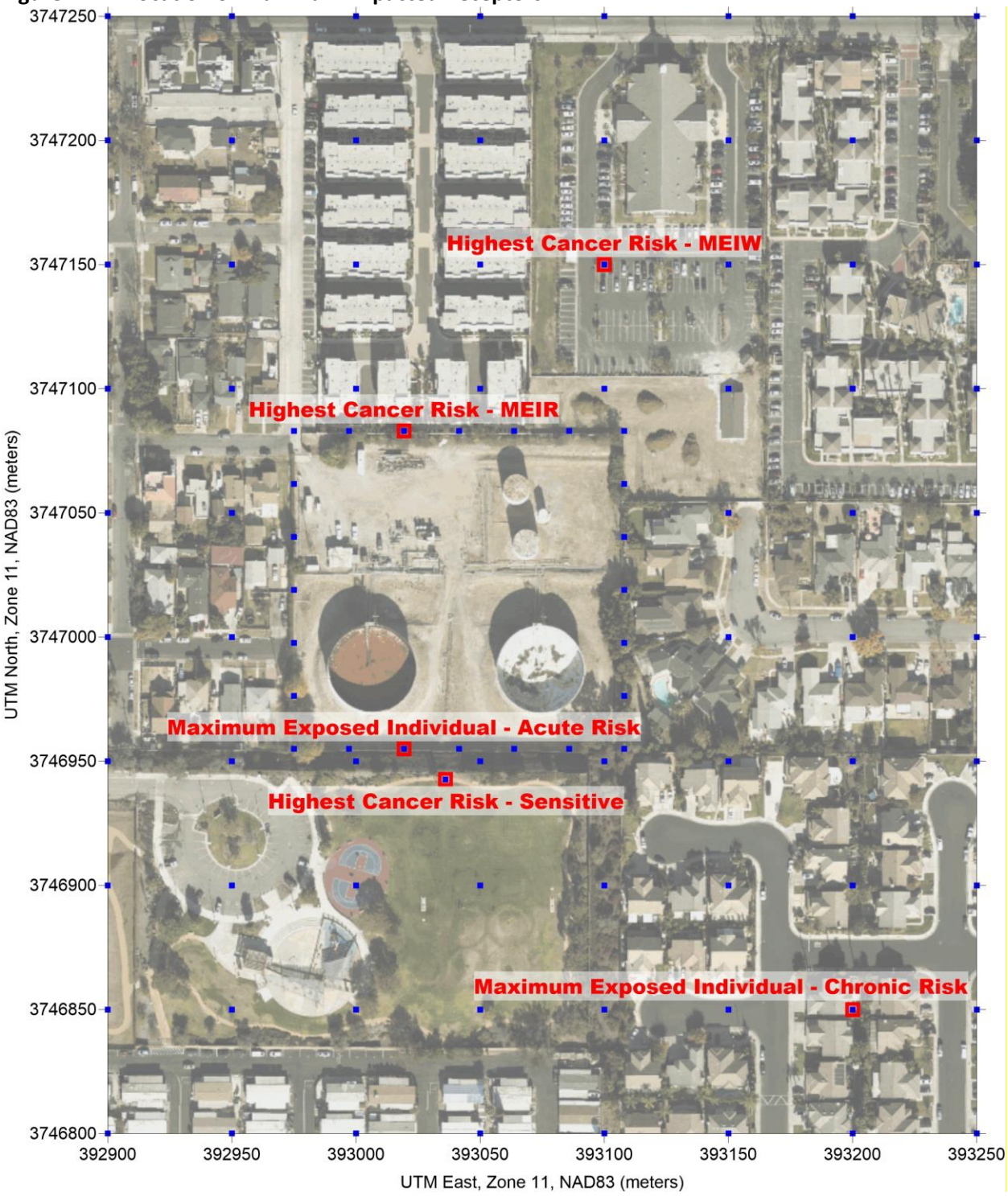


EXHIBIT J. DEFINITIONS AND ACRONYMNS

Definitions

Acute Health Effects – A health effect that occurs after a relatively short period of exposure (e.g., minutes or hours).

Cancer Burden – the estimated increase in the occurrence of cancer cases in a population subject to a maximum individual cancer risk (MICR) of greater than or equal to one in one million (1×10^{-6}) resulting from exposure to toxic air contaminants.

Carcinogenic Risk – A theoretical risk for getting cancer based on a lifetime exposure).

Chronic Health Effects – An adverse non-cancer health effect that develops and persists (e.g., months or years) over time after long-term exposure to a substance.

Dispersion Factor (X/Q) – A site-specific quantity defined as a ratio of the ground level concentration in air ($\mu g/m^3$) to the mass emission rate (g/s).

Exposure Pathway – A route of exposure by which foreign substances enter the human body (e.g., inhalation, ingestion, dermal absorption).

Health Risk Assessment – a technical study identifying toxic air contaminant emissions released from a facility, exposure assessment, dose-response assessment and risk characterization as outlined by the Office of Environmental Health Hazard Assessment (OEHHA) "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments" and the SCAQMD "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act".

Individual Substance Acute Hazard Index (HI) – the ratio of the estimated maximum one-hour, or other time period as specified by the Executive Officer, concentration of a toxic air contaminant at a receptor location to its acute reference exposure level.

Individual Substance Chronic Hazard Index (HI) – the ratio of the long-term level of exposure to a toxic air contaminant for a potential maximally exposed individual to the chronic reference exposure level for the toxic air contaminant.

Inhalation Unit Risk Factor – The theoretical upper bound probability of extra cancer cases occurring in the exposed population assuming a lifetime exposure to the chemical when the air concentration is expressed in exposure units of per microgram/cubic meter [$(\mu g/m3)^{-1}$]

Maximum Individual Cancer Risk (MICR) – the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants pursuant to the SCAQMD approved Risk Assessment Procedures. The MICR calculations include multi-pathway consideration, if applicable.

Receptor Location –

> (A) For the purpose of calculating acute HI, any location outside the boundaries of the facility at which a person could experience acute exposure; and

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(B) For the purpose of calculating chronic HI, MICR, or cancer burden, any location outside the boundaries of the facility at which a person could experience chronic exposure.

Reference Exposure Level (REL) – the concentration level at or below which no adverse non-cancer health effects are anticipated for the specified exposure duration.

Sensitive Receptor – A location such as a hospital or daycare center where the human occupants are considered to be more sensitive to pollutants than "average".

Total Acute Hazard Index (HI) – the sum of the individual substance acute HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Total Chronic Hazard Index (HI) – the sum of the individual substance chronic HIs for all toxic air contaminants identified in the risk assessment guidelines as affecting the same target organ system.

Toxic Air Contaminant (TAC) – an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health as listed by OEHHA.

Acronyms

AB2588 – Assembly Bill 2588

AERMOD – American Meteorological Society/Environmental Protection Agency Regulatory Model

ARB – California Air Resources Board

CAS No. – Chemical Abstract Services Registry Number (CAS)

GLC – ground level concentration

HARP – Hot Spots Analysis and Reporting Program

HRA – health risk assessment

HI – hazard index

MEIR – maximum exposed individual resident

MEIW – maximum exposed individual worker

MICR – maximum individual cancer risk

$\mu g/m^3$ – microgram per cubic meter

OEHHA – Office of Environmental Health Hazard Assessment

REL – reference exposure level

SCAQMD – South Coast Air Quality Management District

UTM – Universal Transverse Mercator

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EXHIBIT K. ELECTRONIC FILES

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Calculation for Ozone Excess Mortality and Morbidity

SCAQMD

	Construction	Operations	Traffic	
Maximum Ozone Concentration (ppm)	0.106	0.106	0.106	based on 2016 AQMP
Precurser Inventory tons/day	1010	1010	1010	based on 2016 AQMP
Project Emissions, lb/day NOX+VOC	455.3	1388.4	1087.5	
Increased ozone (ppb)	0.02389	0.07286	0.05707	
Increased Mortality Rate	0.00179%	0.00546%	0.00428%	
Increased Mortality (per thousand exposed)	**0.071**	**0.213**	**0.167**	
Increased ozone (ppb)	0.023893201	0.072858937	0.05707	
Increased Morbidity Rate	0.00490%	0.01494%	0.01170%	
Increased Morbidity (per thousand exposed)	**0.094**	**0.283**	**0.222**	

Compare Results to:

Baseline Mortality (CARB, 2005)	6.08	per 1000 persons/year for
Baseline Morbidity (CARB, 2005)	10.13	per 1000 persons/year for
	(see Table B-17 from CARB 2005 (volume 4)	

Calculation of Mortality and Morbidity Rates

Mortality	**Construction**	**Operations**	**Traffic**
β	0.489	0.489	0.489
RR	1.012	1.036	1.028
PAR	0.012	0.035	0.028
Δy	0.071	0.213	0.167
Morbidity	**Construction**	**Operations**	**Traffic**
β	0.389	0.389	0.389
RR	1.009	1.029	1.022
PAR	0.009	0.028	0.022
Δy	0.094	0.283	0.222

Slope of

Increase in Mortality (CARB, 2005)	**0.75% per 10 ppb increase**
Increase in Morbidity (CARB, 2005)	**2.05% per 10 ppb increase**

Most of the epidemiologic studies used in our estimates have used a log-linear model to represent the relationship between ozone exposure and the health endpoint. In this case, the relationship between ozone levels and the natural logarithm of the health effect is estimated by a linear regression. This regression model generates a beta coefficient that relates the percent change in the health outcome to a unit increase in ozone. Existing studies have reported either a beta coefficient for a unit change in exposure or a relative risk (RR) for a specified change in ozone concentrations, such as 10 ppb 1-hour maximum. The RR is defined as the ratio of the health effect predicted from the higher exposure relative to some baseline exposure. Health effect estimates presented in a given study as RR for a specified change in ozone, Δ O3, were converted into an estimated beta using the equation:

$\beta = \ln(RR) / \Delta O3$

The daily change in ozone at each monitoring site i.e., the difference between current ozone and the standard (= ΔO3) was used to calculate RR:

$RR = \exp(\beta \Delta O3)$

Then, the RR estimates were used to determine the population attributable risk (PAR), which represents the proportion of the health effects in the whole population that may be prevented if the cause (ozone pollution in our case) is reduced by a given amount. Specifically,

$PAR = (RR - 1) / RR$

Ultimately, the estimated impact on the health outcome is calculated as follows:

$\Delta y = PAR \times y0 \times pop$

where:

Δy = changes in the incidence of a health endpoint corresponding to a particular change in ozone,
y0 = baseline incidence rate/person within a defined at-risk subgroup, and
pop = population size of the group exposed.
Background ozone level based on 2014 basin-wide
Annual basin-wide emissions based on 2012 inventory

AltAir Paramount Refinery -
Renewable Fuels Project
Emissions Calculations - Operations During Construction

Unit	SCAQMD Device ID	Operations Level while Construction Factor (zero to 1.0)	Operational Emissions During Construction, lb/day					
			VOC	Nox	Sox	Co	PM10	PM2.5
Combustion Sources								
H101	D44	0	0.00	0.00	0.00	0.00	0.00	0.00
H102	D45	0	0.00	0.00	0.00	0.00	0.00	0.00
H301	D47	0	0.00	0.00	0.00	0.00	0.00	0.00
H302	D48	0	0.00	0.00	0.00	0.00	0.00	0.00
H303	D73	0	0.00	0.00	0.00	0.00	0.00	0.00
H304	D74	0	0.00	0.00	0.00	0.00	0.00	0.00
H305	D75	0	0.00	0.00	0.00	0.00	0.00	0.00
H306	D76	0	0.00	0.00	0.00	0.00	0.00	0.00
H350	New	0	0.00	0.00	0.00	0.00	0.00	0.00
H351	New	0	0.00	0.00	0.00	0.00	0.00	0.00
H401/H402	D691/C175 -H402 only	1	2.96	20.46	24.40	20.76	7.15	7.15
H501/H502	D46	1	4.61	4.08	3.21	24.84	4.94	4.84
H601	D30	0	0.00	0.00	0.00	0.00	0.00	0.00
H602	D31	0	0.00	0.00	0.00	0.00	0.00	0.00
H701	D123	0	0.00	0.00	0.00	0.00	0.00	0.00
H702	D124	0	0.00	0.00	0.00	0.00	0.00	0.00
H703	D125	0	0.00	0.00	0.00	0.00	0.00	0.00
H704	D126	0	0.00	0.00	0.00	0.00	0.00	0.00
H705	D127	0	0.00	0.00	0.00	0.00	0.00	0.00
H801	D26	0	0.00	0.00	0.00	0.00	0.00	0.00
H802	D29	0	0.00	0.00	0.00	0.00	0.00	0.00
H805	D27	0	0.00	0.00	0.00	0.00	0.00	0.00
H860	D28	0	0.00	0.00	0.00	0.00	0.00	0.00
H901	D128	0	0.00	0.00	0.00	0.00	0.00	0.00
H902	D129	0	0.00	0.00	0.00	0.00	0.00	0.00
H905	Removed	0	0.00	0.00	0.00	0.00	0.00	0.00
H907/H908	C531/D569	1	5.76	90.96	108.49	92.29	13.90	13.90
B6	Removed	0	0.00	0.00	0.00	0.00	0.00	0.00
B7	D374	0.5	2.88	5.84	3.98	19.74	3.98	3.90
B8	D375	0	0.00	0.00	0.00	0.00	0.00	0.00
B9	D376	1	8.53	17.28	11.78	58.46	11.78	11.54
Cogen Turbine	D677	0	0.00	0.00	0.00	0.00	0.00	0.00
Cogen Duct Burner	D679	0	0.00	0.00	0.00	0.00	0.00	0.00
New Flare Pilot/Purge	New	0	0.00	0.00	0.00	0.00	0.00	0.00
H151 (SMR Heater)	New	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Combustion Sources			24.75	138.62	151.86	216.10	41.75	41.31
Hydrogen Generation Unit								
Hydrogen Generation Unit Process Emissions	New	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Hydrogen Generation Unit			0.00	0.00	0.00	0.00	0.00	0.00
Pretreat Unit								
Pretreat Filter Media Tran	New	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Pretreat Unit			0.00	0.00	0.00	0.00	0.00	0.00
Cooling Towers								
Y-800/801/802 & Y-501/5	N/A	1	45.36	0.00	0.00	0.00	9.46	5.67
Y-600	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Cooling Towers			45.36	0.00	0.00	0.00	9.46	5.67
Load Racks								
Truck and Rail Load Racks	Various	0.2	26.42	0.00	0.00	0.00	0.00	0.00
Subtotal- Load Racks			26.42	0.00	0.00	0.00	0.00	0.00
Storage Tanks								
T-1012	D273	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1013	D274	0	0.00	0.00	0.00	0.00	0.00	0.00

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Unit	SCAQMD Device ID	Operations Level while Construction Factor (zero to 1.0)	Operational Emissions During Construction, lb/day					
			VOC	Nox	Sox	Co	PM10	PM2.5
T-241	N/A	1	0.00	0.00	0.00	0.00	0.00	0.00
T-242	D568	1	0.37	0.00	0.00	0.00	0.00	0.00
T-2002	D336	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2014	D337	0	0.00	0.00	0.00	0.00	0.00	0.00
T-10003	D302	0	0.00	0.00	0.00	0.00	0.00	0.00
T-10004	D303	1	0.00	0.00	0.00	0.00	0.00	0.00
T-10005	D748	1	9.86	0.00	0.00	0.00	0.00	0.00
T-12501	D321	1	1.83	0.00	0.00	0.00	0.00	0.00
T-12502	D322	1	1.83	0.00	0.00	0.00	0.00	0.00
T-20001	D323	0	0.00	0.00	0.00	0.00	0.00	0.00
T-20002	D304	0	0.00	0.00	0.00	0.00	0.00	0.00
T-25001	D339	1	10.97	0.00	0.00	0.00	0.00	0.00
T-25003	D341	1	10.97	0.00	0.00	0.00	0.00	0.00
T-25004	D342	1	10.97	0.00	0.00	0.00	0.00	0.00
T-25005	D343	1	11.00	0.00	0.00	0.00	0.00	0.00
T-25009	D346	1	10.82	0.00	0.00	0.00	0.00	0.00
T-35001	D305	0	0.00	0.00	0.00	0.00	0.00	0.00
T-50001	D347	1	22.34	0.00	0.00	0.00	0.00	0.00
T-50002	D348	1	22.34	0.00	0.00	0.00	0.00	0.00
T-100001	D311	0	0.00	0.00	0.00	0.00	0.00	0.00
T-100002	D312	0	0.00	0.00	0.00	0.00	0.00	0.00
T-125001	D351	0	0.00	0.00	0.00	0.00	0.00	0.00
T-150001	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
T-150002	D328	0	0.00	0.00	0.00	0.00	0.00	0.00
T-25A	D329	0	0.00	0.00	0.00	0.00	0.00	0.00
T-25B	D330	0	0.00	0.00	0.00	0.00	0.00	0.00
T-141	D527	0	0.00	0.00	0.00	0.00	0.00	0.00
T-142	D528	0	0.00	0.00	0.00	0.00	0.00	0.00
T-201	D267	0	0.00	0.00	0.00	0.00	0.00	0.00
T-202	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
T-203	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
T-204	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
T-509	D523	0	0.00	0.00	0.00	0.00	0.00	0.00
T-512	D268	0	0.00	0.00	0.00	0.00	0.00	0.00
T-513	D269	0	0.00	0.00	0.00	0.00	0.00	0.00
T-514	D270	0	0.00	0.00	0.00	0.00	0.00	0.00
T-515	D272	0	0.00	0.00	0.00	0.00	0.00	0.00
T-776	D271	0	0.00	0.00	0.00	0.00	0.00	0.00
T-777	D525	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1001	D169	1	0.00	0.00	0.00	0.00	0.00	0.00
T-1014	D275	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1015	D276	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1019	D277	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1020	D278	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1021	D279	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1022	D280	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1023	D281	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1024	D282	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1025	D283	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1026	D284	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1027	D285	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1028	D286	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2044	D287	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2046	D288	0	0.00	0.00	0.00	0.00	0.00	0.00

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			VOC	Nox	Sox	Co	PM10	PM2.5
T-2047	D289	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2048	D290	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2049	D291	0	0.00	0.00	0.00	0.00	0.00	0.00
T-2501	D292	0	0.00	0.00	0.00	0.00	0.00	0.00
T-3501	D293	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5001	D294	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5002	D295	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5003	D296	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5004	D297	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5005	D298	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5006	D299	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5007	D300	0	0.00	0.00	0.00	0.00	0.00	0.00
T-5010	N/A	1	0.00	0.00	0.00	0.00	0.00	0.00
T-5501	D301	0	0.00	0.00	0.00	0.00	0.00	0.00
T-50007	D326	0	0.00	0.00	0.00	0.00	0.00	0.00
T-80001	D327	0	0.00	0.00	0.00	0.00	0.00	0.00
T-80002	D352	0	0.00	0.00	0.00	0.00	0.00	0.00
T-125002	D354	0	0.00	0.00	0.00	0.00	0.00	0.00
D-951	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00
T-518	D378	0	0.00	0.00	0.00	0.00	0.00	0.00
T-1000	D168	0	0.00	0.00	0.00	0.00	0.00	0.00
T-3001	D335	1	2.11	0.00	0.00	0.00	0.00	0.00
T-6001	D315	1	0.70	0.00	0.00	0.00	0.00	0.00
T-6002	D316	1	0.70	0.00	0.00	0.00	0.00	0.00
T-10001	D263	1	1.62	0.00	0.00	0.00	0.00	0.00
T-10006	D318	1	1.91	0.00	0.00	0.00	0.00	0.00
T-10007	D319	1	1.91	0.00	0.00	0.00	0.00	0.00
T-10008	D320	1	1.98	0.00	0.00	0.00	0.00	0.00
T-10009	D264	1	1.62	0.00	0.00	0.00	0.00	0.00
T-20003	D355	1	1.23	0.00	0.00	0.00	0.00	0.00
T-20004	D357	1	1.23	0.00	0.00	0.00	0.00	0.00
T-20005	D324	1	1.20	0.00	0.00	0.00	0.00	0.00
T-25002	D340	1	10.97	0.00	0.00	0.00	0.00	0.00
T-25006	D344	1	14.30	0.00	0.00	0.00	0.00	0.00
T-25007	D325	1	5.02	0.00	0.00	0.00	0.00	0.00
T-25008	D345	1	1.13	0.00	0.00	0.00	0.00	0.00
T-50003	D306	1	10.10	0.00	0.00	0.00	0.00	0.00
T-50004	D356	1	2.01	0.00	0.00	0.00	0.00	0.00
T-50005	D307	1	0.51	0.00	0.00	0.00	0.00	0.00
T-50006	D309	1	0.51	0.00	0.00	0.00	0.00	0.00
T-50008	N/A	1	1.07	0.00	0.00	0.00	0.00	0.00
T-80003	D353	1	0.00	0.00	0.00	0.00	0.00	0.00
Lakewood T-55001	R-M 32898	0	0.00	0.00	0.00	0.00	0.00	0.00
Lakewood T-55002	R-M 32897	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Storage Tanks			175.14	0.00	0.00	0.00	0.00	0.00
Fugitive Components								
Rule 1173 and Rule 1176 (	Various	0.2	165.76	0.00	0.00	0.00	0.00	0.00
Subtotal- Fugitive Components			165.76	0.00	0.00	0.00	0.00	0.00
Wastewater Treatment								
Existing WWT System	Various	1	211.32	0.00	0.00	0.00	0.00	0.00
New Pretreat WWT System	New	0	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Wastewater Treatment			211.32	0.00	0.00	0.00	0.00	0.00
Process Vents								

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			VOC	Nox	Sox	Co	PM10	PM2.5
Process Venting to H-401/402	Modify	1	7.96	0.00	0.00	0.00	0.00	0.00
Process Venting to H-907/908	Modify	1	92.53	0.00	0.00	0.00	0.00	0.00
Subtotal- Process Vents			100.49	0.00	0.00	0.00	0.00	0.00
Onsite Mobile Sources								
Onsite Truck	N/A	0.2	0.16	3.18	0.01	2.33	0.14	0.02
Onsite Rail	N/A	0.2	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal- Onsite Mobile Sources			0.16	3.18	0.01	2.33	0.14	0.02
Offsite Mobile Sources								
Offsite Truck	N/A	0.2	2.89	224.09	0.56	44.44	19.89	2.74
Offsite Rail	N/A	1	7.99	171.72	0.13	50.67	4.53	4.16
Offsite Rail Switcher	N/A	1	0.18	15.38	0.02	6.89	0.23	0.23
Offsite Rail Mover	N/A	1	0.14	3.05	0.00	0.90	0.08	0.07
Marine Vessels	N/A	1	20.33	513.68	14.61	47.74	8.77	8.29
Subtotal- Offsite Mobile Sources			31.54	927.91	15.33	150.63	33.49	15.49