Statement of Basis

Permit to Construct No. P-2016.0020
Project ID 61700

Tesoro Logistics Operations LLC - Pocatello Terminal
Pocatello, Idaho

Facility ID 077-00023

Proposed for Public Comment

DRAFT XX, 2016
Craig Woodruff
Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
Btu	British thermal units
CAA	Clean Air Act
CAS No.	Chemical Abstracts Service registry number
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
hr/yr	hours per consecutive 12 calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct

PTE	potential to emit
PW	process weight rate
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd^3	cubic yards
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Tesoro Logistics Operations LLC – Pocatello Terminal operates a refined petroleum terminal located at 1189 Tank Farm Road, at a site west of central Pocatello, Idaho.

The Terminal consists of numerous storage tanks, a loading rack controlled by a vapor combustion unit (VCU), and various equipment components such as valves, flanges, pumps, and connectors. The VCU is a source of volatile organic compounds (VOC), nitric oxides (NO_x), carbon monoxide (CO), hazardous air pollutant (HAP), toxic air pollutant (TAP), and greenhouse gas (GHG) emissions. VOC emissions also occur from product storage, product loading, and as fugitive from equipment leaks.

The Terminal consists of seventeen tanks for refined petroleum products as well as an additional nine tanks for product additives.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

May 3, 2016	PTC exemption concurrence letter was issued to permanently switch the fuel type stored in tanks No 911 and 914. Tank No. 911 will store gasoline and tank No. 914 diesel. Permit status (A)
May 2, 2013	T2-2008.0026, Tier II renewal and ownership change from Tesoro Logistics Operations LLC – Pocatello Terminal to Chevron Pipe Line Co. and Northwest Terminalling Co., Permit Status (A, but will become S upon issuance of this permit)
February 28, 2013	T2-2008.0026, Ownership transfer from Chevron Pipe Line Co. and Northwest Terminalling Co. to Tesoro Logistics Operations LLC- Pocatello Terminal, Permit status (S)
September 20, 2011	PTC exemption concurrence letter was issued to store denatured ethanol in tank No. 916, Permit status (A)
September 9, 2008	T2-2008.0026, Tier II Operating permit was issued, Permit status (S)
July 10, 2003	Tier II/PTC No. T2-030303, revised permit was issued to clarify conditions in the initial Tier II permit, Permit status (S)
January 22, 2003	Tier II/PTC No. 077-00023, Initial Tier II/PTC permit issued to establish Pocatello facility as a synthetic minor source. Title V requirements no longer apply, Permit status (S)
November 14, 2002	PTC exemption concurrence letter was issued for installation of new gasoline tanks No. 921 and 922 to replace tanks No. 904, 909, 910, 913, 915, and 930, Permit status (A)
April 2, 2001	DEQ received an application from Chevron for a Tier II operating permit to be issued as a synthetic minor permit instead of a Tier I permit, Permit status (S)
August 18, 1995	DEQ issued a letter to Chevron acknowledging receipt of a Category I Exemption determination for additive tank A110, Permit status (A)
June 12, 1995	DEQ received an application from Chevron for a Tier I operating permit, Permit status (S)
April 21, 1995	PTC No. 077-00023, modified PTC issued to allow storage of gasoline in tanks No. 919 and 920, including conditions for 40 CFRR 60, Subpart Kb, Permit status (S)

June 6, 1994	PTC No. 077-00023, Revised PTC issued for the addition of diesel storage tanks No919 and 920 to fix a typographical error, Permit status (S)
February 28, 1994	PTC No. 005-00003, Addition of diesel storage tanks No. 919 and 920, Permit status (S)

Application Scope

This PTC is converting a Tier II operating permit to a PTC and incorporating a vapor combustion unit. Also, this PTC incorporates a name change from Chevron Pipe Line Co. and Northwest Terminalling Co. to Tesoro Logistics Operations LLC. – Pocatello Terminal.

The applicant has proposed to:

- Incorporate an existing vapor combustion unit into a PTC

Application Chronology

April 15, 2016	DEQ received an application and an application fee.
April 26 – May 11, 2016	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
May 12, 2016	DEQ determined that the application was complete.
June 30, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.
July 11, 2016	DEQ made available the draft permit and statement of basis for applicant review.
Month Day – Month Day, Year	DEQ provided a public comment period on the proposed action.
Month Day, Year	DEQ received the permit processing fee.
Month Day, Year	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
1	Truck Loading Rack: Loading Type: Bottom-Loading Balanced Service Model: Loading Arm Vapor Closure: Chicksan Gasoline Throughput: 370,800,990 gal/yr Transmix Throughput: 2,520,000 gal/yr Diesel Throughput: 191,453,010 gal/yr	Vapor Combustion Unit: Manufacturer: John Zink Co. Model: ZCT-2-8-35-X-2/8-X-X Type: Vapor Combustion Flare VOC control efficiency: 95.0% destruction and 99.2% capture efficiency	Exit height: 35 ft (10.67 m) Exit diameter: 8 ft (2.44 m) Exit temperature: 607 °F (319.44 ºC)
2	Tank 901 – Diesel, Max Capacity: 369,600 gallons	Vertical Fixed Roof	No Stack
3	Tank 902 – Transmix, Max Capacity: 324,324 gallons	Internal Floating Roof	No Stack
4	Tank 903 – Diesel, Max Capacity: 380,772 gallons	Vertical Fixed Roof	No Stack
5	Tank 905 – Diesel, Max Capacity: 376,782 gallons	Vertical Fixed Roof	No Stack
6	Tank 906 – Diesel, Max Capacity: 379,176 gallons	Vertical Fixed Roof	No Stack
7	Tank 907 – Diesel, Max Capacity: 360,864 gallons	Internal Floating Roof	No Stack
8	Tank 908 – Diesel, Max Capacity: 376,614 gallons	Vertical Fixed Roof	No Stack
9	Tank 911 – Gasoline, Max Capacity: 796,908 gallons	Internal Floating Roof	No Stack
10	Tank 914 – Diesel, Max Capacity: 567,462 gallons	Internal Floating Roof	No Stack
11	Tank 915 – Gasoline, Max Capacity: 378,168 gallons	Internal Floating Roof	No Stack
12	Tank 916 – Ethanol, Max Capacity: 669,522 gallons	Internal Floating Roof	No Stack
13	Tank 917 – Diesel, Max Capacity: 798,294 gallons	Vertical Fixed Roof	No Stack
14	Tank 918 – Diesel, Max Capacity: 807,072 gallons	Internal Floating Roof	No Stack
15	Tank 919 – Gasoline, Max Capacity: 764,106 gallons	Internal Floating Roof	No Stack
16	Tank 920 – Gasoline, Max Capacity: 745,206 gallons	Internal Floating Roof	No Stack
17	Tank 921 – Gasoline, Max Capacity: 1,950,060 gallons	Internal Floating Roof	No Stack
18	Tank 922 – Gasoline, Max Capacity: 1,944,558 gallons	Internal Floating Roof	No Stack
19	Tank A100 – Additive, Max Capacity: 21,000 gallons	Vertical Fixed Roof	No Stack
20	Tank A101 – Additive, Max Capacity: 6,000 gallons	Horizontal Fixed Roof	No Stack
21	Tank A102 – Additive, Max Capacity: 4,000 gallons	Horizontal Fixed Roof	No Stack
22	Tank A105 – Additive, Max Capacity: 2,000 gallons	Horizontal Fixed Roof	No Stack
23	Tank A108 – Additive, Max Capacity: 7,500 gallons	Horizontal Fixed Roof	No Stack
24	Tank A110 – Additive, Max Capacity: 4,000 gallons	Horizontal Fixed Roof	No Stack
25	Tank A112 – Additive, Max Capacity: 6,500 gallons	Horizontal Fixed Roof	No Stack
26	Tank A113 – Additive, Max Capacity: 7,800 gallons	Horizontal Fixed Roof	No Stack
27	Tank A114 – Additive, Max Capacity: 1,600 gallons	Horizontal Fixed Roof	No Stack

Emissions Inventories

<u>Potential to Emit</u>

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the truck loading rack, vapor combustion unit, and 26 tanks operating at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, GHG, and HAP PTE were based on emission factors from AP-42 and Tanks Software, operation of 8,760 hours per year, and process information specific to the facility for this proposed project.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For the vapor combustion unit, loading rack, and comfort heater operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr (24 hr/day x 365 day/yr). The calculated HAP PTE was based upon the uncontrolled PTE supplied in lb/hr by the applicant. Then, the worst-case maximum HAP Potential to Emit was determined.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants	PTE (T/yr)
Benzene	40.0
Biphenyl	0.0000862
Cresol	0.00290
Ethyl Benzene	2.97
n-Hexane	67.6
Isopropyl Benzene	0.253
Isooctane	31.6
Methanol	5.68
Naphthalene	0.0526
Phenol	0.0315
Styrene	0.16
Toluene	48.1
Xylenes	18.6
Total	**215.05**

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is for an existing facility and includes all of the emission units located at Tesoro Logistics Operations LLC – Pocatello Terminal. The pre-project VOC emissions from the loading rack were back calculated using the control efficiencies of the Vapor Combustion unit and added to the existing loading rack emissions. The vapor combustion unit control efficiency was assumed to be 95% per the applicant and is only applicable for VOC control of diesel and transmix. The following table presents the pre-project potential to emit for all criteria and GHG pollutants from all emissions units at the facility/for the one unit being modified as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e
	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	T/yr[(b)]
Tank Losses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.27	23.07	0.00
Fugitive Fittings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.11	0.00
Loading Rack Fugitives	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	5.12	0.00
Truck Loading Rack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.67	20.47	0.00
Pre-Project Totals	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.36**	**49.77**	**0.00**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e
	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	T/yr[(b)]
Tank Losses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.27	23.07	N/A
Fugitive Fittings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.25	1.11	N/A
Loading Rack Fugitives	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.87	8.21	N/A
Truck Rack VCU	0.48	0.17	0.03	0.02	8.99	3.23	5.03	1.81	35.84	15.85	1225.22
Post Project Totals	**0.48**	**0.17**	**0.03**	**0.02**	**8.99**	**3.23**	**5.03**	**1.81**	**43.23**	**48.24**	**1225.22**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.36	49.77	0.00
Post Project Potential to Emit	0.48	0.17	0.03	0.02	8.99	3.23	5.03	1.81	43.23	48.24	1225.22
Changes in Potential to Emit	**0.48**	**0.17**	**0.03**	**0.02**	**8.99**	**3.23**	**5.03**	**1.81**	**31.87**	**-1.53**	**1225.22**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table. TAP emissions were calculated for the vapor combustion unit, loading rack, and comfort heater. Since this is the initial PTC for the vapor combustion unit, pre-project TAP emissions are set to zero.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Trimethyl Benzene	0.00E-03	8.37E-03	0.0084	8.2	No
2,2,4-Trimethyl-Pentane	0.00E-03	1.51E-01	0.1510	23.3	No
Biphenyl	0.00E-03	1.13E-06	0.0000	0.1	No
Cresol	0.00E-03	3.81E-05	0.0000	1.47	No
Ethyl Benzene	0.00E-03	1.49E-02	0.0149	29	No
n-Hexane	0.00E-03	3.60E-01	0.3600	12	No
Cumene (Isopropyl Benzene)	0.00E-03	1.54E-03	0.0015	16.3	No
Methanol	0.00E-03	2.68E-02	0.0268	17.3	No
Naphthalene	0.00E-03	4.41E-04	0.0004	3.33	No
Phenol	0.00E-03	4.14E-04	0.0004	1.27	No
Styrene	0.00E-03	7.54E-04	0.0008	6.67	No
Toluene	0.00E-03	2.31E-01	0.2310	25	No
Xylenes	0.00E-03	9.21E-02	0.0921	29	No
Dichlorobenzene	0.00E-03	2.20E-05	0.0000	20	No
Nitrous Oxide	0.00E-03	5.62E-03	0.0056	6	No

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table. TAP emissions were calculated for the vapor combustion unit, loading rack, and comfort heater. Since this is the initial PTC for the vapor combustion unit, pre-project TAP emissions are set to zero.

Pre- and post-project, as well as the change in, carcinogenic TAP emissions are presented in the following table:

Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Benzene	**0.00E-03**	**1.88E-01**	**0.0514**	**8.0E-04**	**Yes**
Formaldehyde	**0.00E-03**	**1.38E-03**	**0.0001**	**5.1E-04**	**Yes**
Arsenic	**0.00E-03**	**3.67E-06**	**0.0000**	**1.5E-06**	**Yes**
Beryllium	0.00E-03	2.20E-07	0.0000	2.8E-05	No
Cadmium	**0.00E-03**	**2.02E-05**	**0.0000**	**3.7E-06**	**Yes**
Chromium	0.00E-03	2.57E-05	0.0000	0.033	No
Cobalt	0.00E-03	1.54E-06	0.0000	0.0033	No
Manganese	0.00E-03	6.98E-06	0.0000	0.067	No
Nickel	**0.00E-03**	**3.86E-05**	**0.0000**	**2.7E-05**	**Yes**
Naphthalene	**0.00E-03**	**4.41E-04**	**0.0001**	**9.1E-05**	**Yes**
Selenium	0.00E-03	4.41E-07	0.0000	0.013	No
7-PAH group (POM)	0.00E-03	2.09E-07	0.0000	2.0E-06	No
Benzo(a)pyrene	0.00E-03	2.20E-08	0.0000	2.0E-06	No
PAH	0.00E-03	1.41E-06	0.0000	9.1E-05	No

a) Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Some of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is required for benzene, formaldehyde, arsenic, cadmium, nickel, and naphthalene because the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (T/yr)
Benzene	1.87E-01
Biphenyl	6.05E-02
Cresol	6.07E-02
Ethyl Benzene	8.96E-02
n-Hexane	4.45E-01
Isopropyl Benzene	6.78E-02
Isooctane	2.01E-01
Methanol	7.70E-02
Naphthalene	6.47E-02
Phenol	1.48E-03
Styrene	6.11E-02
Toluene	3.10E-01
Xylenes	1.98E-01
Totals	**1.82**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of NO_X and TAP from this project exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix A.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Bannock County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

[1] Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions ≥ 25 T/yr.

SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.

SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.

B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold

UNK = Class is unknown

For All Other Pollutants:

A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	N/A	0.17	**100**	B
$PM_{10}/PM_{2.5}$	N/A	0.17	**100**	B
SO_2	N/A	0.02	**100**	B
NO_X	N/A	3.23	**100**	B
CO	N/A	1.81	**100**	B
VOC[(a)]	N/A	43.23	**100**	SM
HAP (single)[(b)]	67.6	0.445	**10**	SM
HAP (Total)[(b)]	215.05	1.82	**25**	SM

a) Uncontrolled VOC has been shown to be greater than 100 T/yr in previous permitting actions. Therefore, the Facility is classified as Synthetic Minor for VOCs.

b) Uncontrolled HAP, both single and total, was only calculated for the loading rack, vapor combustion unit, and comfort heater. The tanks have been omitted from this calculation; however the facility is classified as Synthetic Minor based on these emission units.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201.. Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 .... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 .... Visible Emissions

The sources of PM_{10} emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.7 and 2.8.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 .... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM_{10}, SO_2, NO_X, CO, VOC, or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 .... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

Because the facility operates gasoline storage tanks and is subject to 40 CFR 63 Subpart R, as outlined in MACT applicability the following requirements apply:

- **40 CFR 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)**

DEQ has been delegated authority of this subpart.

The applicable requirements of this subpart are highlighted in yellow.

52 FR 11429, Oct. 15, 2003, 40 CFR 6, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)

§ 60.110b .... Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

Tesoro Logistics Operations operates four tanks which have a capacity greater than 75 cubic meters that store gasoline. These tanks are greater than 151 cubic meters but the maximum true vapor pressure of gasoline is greater than 3.5 kilopascals. The storage units directly regulated by this subpart are also subject to alternative means of compliance if they so choose. CFR 63 Subpart R references this subpart and those affected tanks are subject to §60.110b(a) and §60.110b(b) but not alternative means of compliance.

§ 60.111b .... Definitions.

The definitions of Subpart Kb apply to this facility and no further discussion is required.

§ 60.112b .... Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in §60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in §60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, §60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in §60.114b of this subpart.

Tesoro Logistics Operations is required to install the roof type described in §60.112b(a) or §60.112b(b). The four tanks that are directly subject to this subpart have internal floating roofs installed, therefore §60.112b(a) is applicable. The tanks that are subject through reference by CFR 63 Subpart R also have internal floating roofs installed and §60.112b(a)(1)(i) through §60.112b(a)(1)(iii) are applicable. Compliance is assured by Permit Condition 4.7.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in §60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in §60.114b of this subpart.

Tesoro Logistics Operations does not store any species with a vapor pressure greater than 76.6 kPa, therefore §60.112b(b) is not applicable.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

Tesoro Logistics Operations is not Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia, therefore §60.112b(c) is not applicable.

§ 60.113b .... Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

Tesoro Logistics Operations operates tanks that are required to install one of the roof types described in §60.112b(a) or §60.112b(b).The facility has installed internal floating roofs on all of the tanks that are applicable to this subpart. Therefore, the facility is subject to the testing and procedures requirements set forth in §60.112b(a)(1) through (5). Compliance is assured by Permit Condition 4.9.

(b) After installing the control equipment required to meet §60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of §60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

Tesoro Logistics Operations installed internal floating roofs on all of the applicable tanks. Therefore, the testing and procedures for external floating roofs as described in §60.113b(b) are not applicable.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by §60.7(a)(1) or, if the facility is exempt from §60.7(a)(1), as an attachment to the notification required by §60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in §60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, §60.18 (e) and (f).

Tesoro Logistics Operations has not installed a closed vent system on any of the subject tanks nor have they installed a closed vent system with a flare. Therefore, the testing and procedures for these systems are not applicable.

§ 60.114b .... Alternative means of emission limitation

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in §60.112b, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in §60.112b.

Tesoro Logistics Operations has the option to use the provisions of §60.114b for alternative means of emission limitation under §60.112b. Compliance is assured by Permit Condition 4.10.

§ 60.115b .... Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

Tesoro Logistics Operations has installed internal floating roofs and is subject to the recordkeeping requirements set forth in §60.115b(a). Compliance is assured by Permit Condition 4.12.

(b) After installing control equipment in accordance with §61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(2) and §60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by §60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in §60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by §60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in §60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by §60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

The tanks operated by this facility subject to this subpart are not equipped with external floating roofs and §60.115b(b) does not apply.

(c) After installing control equipment in accordance with §60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

The tanks operated by this facility subject to this subpart have not been equipped with any of the closed vent systems. Therefore, §60.115b(c) does not apply.

(d) After installing a closed vent system and flare to comply with §60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

The tanks operated by this facility subject to this subpart have not been equipped with a closed vent system with a flare. Therefore, §60.115b(d) does not apply.

§ 60.116b .... Monitoring of operations

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

Tesoro Logistics Operations stores gasoline in tanks that have a storage capacity greater than 151 cubic meters. The facility is subject to the requirements set forth in §60.116b(a) through §60.116b(e). Compliance is assured by Permit Condition 4.11.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(ii) ASTM D323-82 or 94 (incorporated by reference—see §60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

Tesoro Logistics Operations stores transmix which is a mixture of indeterminate or variable composition. The facility is subject to the requirements of §60.116b(f). Compliance is assured by Permit Condition 4.11.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of §60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

The tanks operated by Tesoro Logistics Operations that are subject to this subpart are not equipped with any of the closed vent systems and as a result §60.116b(g) is not applicable.

§ 60.117b .... Delegation of authority

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

DEQ has not been delegated this subpart.

Because the facility is subject to CFR 63 Subpart R and they operate a vapor combustion control device, the following NSPS requirement applies:

- **40 CFR 60, Subpart XX – Standards of Performance for Bulk Gasoline Terminals**

DEQ has been delegated authority of this subpart.

The applicable requirements of the subpart are highlighted in yellow.

48 FR 37590, Dec. 19, 2003, 40 CFR 60, Subpart XX – NSPS Standards of Performance for Bulk Gasoline Terminals

§ 60.500 .... Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is the total of all the loading racks at a bulk gasoline terminal which deliver liquid product into gasoline tank trucks.

(b) Each facility under paragraph (a) of this section, the construction or modification of which is commenced after December 17, 1980, is subject to the provisions of this subpart.

(c) For purposes of this subpart, any replacement of components of an existing facility, described in paragraph (a) of this section, commenced before August 18, 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof will not be considered a reconstruction under the provisions of 40 CFR 60.15.

Tesoro Logistics Operations is subject to this subpart by reference in CFR 63 Subpart R. The facility owns and operates a loading rack at a bulk gasoline terminal, and modification has occurred after December 17, 1980. The facility is subject to §60.500(a) and (b). The vapor combustion unit is not defined as reconstruction or modification to the loading rack. §60.500(c) does not apply.

§ 60.501 .... Definitions

The definitions of Subpart XX apply to this facility and no further discussion is required.

§ 60.502 .... Standard for Volatile Organic Compound (VOC) emissions from bulk gasoline terminals.

On and after the date on which §60.8(a) requires a performance test to be completed, the owner or operator of each bulk gasoline terminal containing an affected facility shall comply with the requirements of this section.

(a) Each affected facility shall be equipped with a vapor collection system designed to collect the total organic compounds vapors displaced from tank trucks during product loading.

(b) The emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 milligrams of total organic compounds per liter of gasoline loaded, except as noted in paragraph (c) of this section.

(c) For each affected facility equipped with an existing vapor processing system, the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 80 milligrams of total organic compounds per liter of gasoline loaded.

Tesoro Logistics Operations is not directly subject to this NSPS and is only subject to the referenced parts. The reference in CFR 63 Subpart R excludes § 60.502(b) and § 60.502(c). Compliance is assured by Permit Condition 3.8.

(d) Each vapor collection system shall be designed to prevent any total organic compounds vapors collected at one loading rack from passing to another loading rack.

(e) Loadings of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

(1) The owner or operator shall obtain the vapor tightness documentation described in §60.505(b) for each gasoline tank truck which is to be loaded at the affected facility.

(2) The owner or operator shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the affected facility.

(3)(i) The owner or operator shall cross-check each tank identification number obtained in paragraph (e)(2) of this section with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded, unless either of the following conditions is maintained:

(A) If less than an average of one gasoline tank truck per month over the last 26 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed each quarter; or

(B) If less than an average of one gasoline tank truck per month over the last 52 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed semiannually.

(ii) If either the quarterly or semiannual cross-check provided in paragraphs (e)(3)(i) (A) through (B) of this section reveals that these conditions were not maintained, the source must return to biweekly monitoring until such time as these conditions are again met.

(4) The terminal owner or operator shall notify the owner or operator of each non-vapor-tight gasoline tank truck loaded at the affected facility within 1 week of the documentation cross-check in paragraph (e)(3) of this section.

(5) The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline tank truck will not be reloaded at the affected facility until vapor tightness documentation for that tank is obtained.

(6) Alternate procedures to those described in paragraphs (e)(1) through (5) of this section for limiting gasoline tank truck loadings may be used upon application to, and approval by, the Administrator.

(f) The owner or operator shall act to assure that loadings of gasoline tank trucks at the affected facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system.

(g) The owner or operator shall act to assure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the affected facility. Examples of actions to accomplish this include training drivers in the hookup procedures and posting visible reminder signs at the affected loading racks.

(h) The vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading. This level is not to be exceeded when measured by the procedures specified in §60.503(d).

(i) No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system shall begin to open at a system pressure less than 4,500 pascals (450 mm of water).

(j) Each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected.

Tesoro Logistics Operations is not directly subject to this NSPS and is only subject to the referenced parts. CFR 63 Subpart R excludes §60.502(j), but §60.502(a) through (i) are applicable. As referenced in §63.422(c)(2), §60.502(e)(5) is changed to read as follows:

(2) Section 60.502(e)(5) of this chapter is changed to read: The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline cargo tank will not be reloaded at the facility until vapor tightness documentation for that gasoline cargo tank is obtained which documents that:

(i) The tank truck or railcar gasoline cargo tank meets the test requirements in §63.425(e), or the railcar gasoline cargo tank meets applicable test requirements in §63.425(i);

(ii) For each gasoline cargo tank failing the test in §63.425 (f) or (g) at the facility, the cargo tank either:

(A) Before repair work is performed on the cargo tank, meets the test requirements in §63.425 (g) or (h), or

(B) After repair work is performed on the cargo tank before or during the tests in §63.425 (g) or (h), subsequently passes the annual certification test described in §63.425(e).

Compliance with these sections is assured by Permit Condition 3.8.

§ 60.503 .... Test methods and procedures

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). The three-run requirement of §60.8(f) does not apply to this subpart.

(b) Immediately before the performance test required to determine compliance with §60.502 (b), (c), and (h), the owner or operator shall use Method 21 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator shall repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.

(c) The owner or operator shall determine compliance with the standards in §60.502 (b) and (c) as follows:

(1) The performance test shall be 6 hours long during which at least 300,000 liters of gasoline is loaded. If this is not possible, the test may be continued the same day until 300,000 liters of gasoline is loaded or the test may be resumed the next day with another complete 6-hour period. In the latter case, the 300,000-liter criterion need not be met. However, as much as possible, testing should be conducted during the 6-hour period in which the highest throughput normally occurs.

(2) If the vapor processing system is intermittent in operation, the performance test shall begin at a reference vapor holder level and shall end at the same reference point. The test shall include at least two startups and shutdowns of the vapor processor. If this does not occur under automatically controlled operations, the system shall be manually controlled.

(3) The emission rate (E) of total organic compounds shall be computed using the following equation:

$$E = K\sum_{i=1}^{n}\left(V_{esi}C_{ei}\right) / \left(L10^{6}\right)$$

where:

E = emission rate of total organic compounds, mg/liter of gasoline loaded.

V_{esi} = volume of air-vapor mixture exhausted at each interval “i”, scm.

C_{ei} = concentration of total organic compounds at each interval “i”, ppm.

L = total volume of gasoline loaded, liters.

n = number of testing intervals.

i = emission testing interval of 5 minutes.

K = density of calibration gas, 1.83×10^6 for propane and 2.41×10^6 for butane, mg/scm.

(4) The performance test shall be conducted in intervals of 5 minutes. For each interval “i”, readings from each measurement shall be recorded, and the volume exhausted (V_{esi}) and the corresponding average total organic compounds concentration (C_{ei}) shall be determined. The sampling system response time shall be considered in determining the average total organic compounds concentration corresponding to the volume exhausted.

(5) The following methods shall be used to determine the volume (V_{esi}) air-vapor mixture exhausted at each interval:

(i) Method 2B shall be used for combustion vapor processing systems.

(ii) Method 2A shall be used for all other vapor processing systems.

(6) Method 25A or 25B shall be used for determining the total organic compounds concentration (C_{ei}) at each interval. The calibration gas shall be either propane or butane. The owner or operator may exclude the methane and ethane content in the exhaust vent by any method (e.g., Method 18) approved by the Administrator.

(7) To determine the volume (L) of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the processing system being tested, terminal records or readings from gasoline dispensing meters at each loading rack shall be used.

(d) The owner or operator shall determine compliance with the standard in §60.502(h) as follows:

(1) A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure with ±2.5 mm of water precision, shall be calibrated and installed on the terminal's vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck.

(2) During the performance test, the pressure shall be recorded every 5 minutes while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded. Every loading position must be tested at least once during the performance test.

Tesoro Logistics Operations is subject to the test methods and procedures through reference in 40 CFR 63.425(a)(1) to demonstrate compliance with the emissions standards for the loading rack and vapor control system. The facility is exempted from showing compliance with §60.502(b) and (c) by §63.422(a). Therefore, the facility is not subject to the requirements listed in §60.503(c). Compliance is assured by Permit Conditions 3.8 and 3.10.

(e) The performance test requirements of paragraph (c) of this section do not apply to flares defined in §60.501 and meeting the requirements in §60.18(b) through (f). The owner or operator shall demonstrate that the flare and associated vapor collection system is in compliance with the requirements in §§60.18(b) through (f) and 60.503(a), (b), and (d).

Tesoro Logistics Operations does not operate a flare as defined in §60.501 and meeting the requirements of §60.18(b) through (f). The facility is not subject to §60.503(e).

(f) The owner or operator shall use alternative test methods and procedures in accordance with the alternative test method provisions in §60.8(b) for flares that do not meet the requirements in §60.18(b).

Tesoro Logistics Operations may use alternative test methods and procedures for the flare if it does not meet the requirements in §60.18(b). Compliance is assured by Permit Condition 3.10.

§ 60.504 .... [Reserved]

§ 60.505 .... Reporting and recordkeeping.

(a) The tank truck vapor tightness documentation required under §60.502(e)(1) shall be kept on file at the terminal in a permanent form available for inspection.

(b) The documentation file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by Method 27. This documentation shall include, as a minimum, the following information:

(1) Test title: Gasoline Delivery Tank Pressure Test—EPA Reference Method 27.

(2) Tank owner and address.

(3) Tank identification number.

(4) Testing location.

(5) Date of test.

(6) Tester name and signature.

(7) Witnessing inspector, if any: Name, signature, and affiliation.

(8) Test results: Actual pressure change in 5 minutes, mm of water (average for 2 runs).

(c) A record of each monthly leak inspection required under §60.502(j) shall be kept on file at the terminal for at least 2 years. Inspection records shall include, as a minimum, the following information:

(1) Date of inspection.

(2) Findings (may indicate no leaks discovered; or location, nature, and severity of each leak).

(3) Leak determination method.

(4) Corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days).

(5) Inspector name and signature.

(d) The terminal owner or operator shall keep documentation of all notifications required under §60.502(e)(4) on file at the terminal for at least 2 years.

(e) As an alternative to keeping records at the terminal of each gasoline cargo tank test result as required in paragraphs (a), (c), and (d) of this section, an owner or operator may comply with the requirements in either paragraph (e)(1) or (2) of this section.

(1) An electronic copy of each record is instantly available at the terminal.

(i) The copy of each record in paragraph (e)(1) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e)(1) of this section.

(2) For facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (*e.g.*, via a card lock-out system), a copy of the documentation is made available (*e.g.*, via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame.

(i) The copy of each record in paragraph (e)(2) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e)(2) of this section.

(f) The owner or operator of an affected facility shall keep records of all replacements or additions of components performed on an existing vapor processing system for at least 3 years.

Tesoro Logistics Operations is not directly subject to this NSPS and 40 CFR 63 Subpart R does not reference §60.505. However, the requirements of §60.502(e) require §60.505(b) to be followed to show compliance with the vapor tightness documentation. This is assured by Permit Condition 3.8.

§ 60.506 .... Reconstruction.

For purposes of this subpart:

(a) The cost of the following frequently replaced components of the affected facility shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital costs that would be required to construct a comparable entirely new facility” under §60.15: pump seals, loading arm gaskets and swivels, coupler gaskets, overfill sensor couplers and cables, flexible vapor hoses, and grounding cables and connectors.

(b) Under §60.15, the “fixed capital cost of the new components” includes the fixed capital cost of all depreciable components (except components specified in §60.506(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following December 17, 1980. For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

The definitions of reconstruction in §60.506 are applicable to the facility as they are subject to 40 CFR 60 Subpart XX.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

Because the facility is a bulk gasoline distribution terminal the following MACT requirement may apply. Pursuant an EPA decision on September 9, 2000 which indicated that the Pocatello Terminal is subject to the requirements under NESHAP Subpart R via EPA’s “Once In, Always In” policy with respect to NESHAP. The Facility is not currently a major source of HAP which would exempt them from this subpart, however the EPA decision controls.

- **40 CFR 63, Subpart R – National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)**

DEQ has been delegated authority of this subpart.

The applicable requirements of the subpart are highlighted in yellow.

59 FR 64318, Dec. 14, 1994, 40 CFR 63, Subpart R – National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

§ 63.420 .... Applicability

(a) The affected source to which the provisions of this subpart apply is each bulk gasoline terminal, except those bulk gasoline terminals:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, ET, of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

ET = CF[0.59(TF)(1-CE) + 0.17 (TE) + 0.08(TES) + 0.038(TI) + 8.5 × 10-6(C) + KQ] + 0.04(OE)

where:

ET = emissions screening factor for bulk gasoline terminals;

CF = 0.161 for bulk gasoline terminals and pipeline breakout stations that do not handle any reformulated or oxygenated gasoline containing 7.6 percent by volume or greater methyl tert-butyl ether (MTBE), OR

CF = 1.0 for bulk gasoline terminals and pipeline breakout stations that handle reformulated or oxygenated gasoline containing 7.6 percent by volume or greater MTBE;

CE = control efficiency limitation on potential to emit for the vapor processing system used to control emissions from fixed-roof gasoline storage vessels [value should be added in decimal form (percent divided by 100)];

TF = total number of fixed-roof gasoline storage vessels without an internal floating roof;

TE = total number of external floating roof gasoline storage vessels with only primary seals;

TES = total number of external floating roof gasoline storage vessels with primary and secondary seals;

TI = total number of fixed-roof gasoline storage vessels with an internal floating roof;

C = number of valves, pumps, connectors, loading arm valves, and open-ended lines in gasoline service;

Q = gasoline throughput limitation on potential to emit or gasoline throughput limit in compliance with paragraphs (c), (d), and (f) of this section (liters/day);

K = 4.52×10^{-6} for bulk gasoline terminals with uncontrolled loading racks (no vapor collection and processing systems), OR

K = $(4.5 \times 10^{-9})(EF + L)$ for bulk gasoline terminals with controlled loading racks (loading racks that have vapor collection and processing systems installed on the emission stream);

EF = emission rate limitation on potential to emit for the gasoline cargo tank loading rack vapor processor outlet emissions (mg of total organic compounds per liter of gasoline loaded);

OE = other HAP emissions screening factor for bulk gasoline terminals or pipeline breakout stations (tons per year). OE equals the total HAP from other emission sources not specified in parameters in the equations for ET or EP. If the value of 0.04(OE) is greater than 5 percent of either ET or EP, then paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability;

L = 13 mg/l for gasoline cargo tanks meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter, OR

L = 304 mg/l for gasoline cargo tanks not meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(b) The affected source to which the provisions of this subpart apply is each pipeline breakout station, except those pipeline breakout stations:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, EP, of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

$$EP = CF [6.7(TF)(1-CE) + 0.21(TE) + 0.093(TES) + 0.1(TI) + 5.31 \times 10^{-6}(C)) + 0.04(OE);$$

where:

EP = emissions screening factor for pipeline breakout stations,

and the definitions for CF, TF, CE, TE, TES, TI, C, and OE are the same as provided in paragraph (a)(1) of this section; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(c) A facility for which the results, ET or EP, of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 1.0 but greater than or equal to 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section, and approved by the Administrator, is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(i).

(d) A facility for which the results, ET or EP, of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(j).

(e) The provisions of paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:

(1) Located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station, or

(2) Located within a contiguous area and under common control with other sources not specified in paragraphs (a)(1) or (b)(1) of this section, that emit or have the potential to emit a hazardous air pollutant.

(f) Upon request by the Administrator, the owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of any paragraphs in this section including, but not limited to, the parameters and assumptions used in the applicable equation in paragraph (a)(1) or (b)(1) of this section, shall demonstrate compliance with those paragraphs.

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart that is also subject to applicable provisions of 40 CFR part 60, subpart Kb or XX of this chapter shall comply only with the provisions in each subpart that contain the most stringent control requirements for that facility.

(h) Each owner or operator of an affected source bulk gasoline terminal or pipeline breakout station is subject to the provisions of 40 CFR part 63, subpart A—General Provisions, as indicated in Table 1.

(i) A bulk gasoline terminal or pipeline breakout station with a Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery complying with subpart CC, §§63.646, 63.648, 63.649, and 63.650 is not subject to subpart R standards, except as specified in subpart CC, §63.650.

(j) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the December 14, 1995 compliance date for existing facilities in §63.424(e) and §63.428(a), (i)(1), and (j)(1) of this subpart is stayed from December 8, 1995, to March 7, 1996.

Tesoro Logistics Operations is subject to §63.420 as a result of an EPA determination on February 4, 2000 in accordance with the 1995 EPA memorandum from John S. Seitz titled "Potential to Emit for MACT Standards – Guidance on Timing Issues".

§ 63.421 .... Definitions

The definitions of Subpart R apply to this facility and no further discussion is required.

§ 63.422 .... Standards: Loading racks

(a) Each owner or operator of loading racks at a bulk gasoline terminal subject to the provisions of this subpart shall comply with the requirements in §60.502 of this chapter except for paragraphs (b), (c), and (j) of that section. For purposes of this section, the term “affected facility” used in §60.502 of this chapter means the loading racks that load gasoline cargo tanks at the bulk gasoline terminals subject to the provisions of this subpart.

Tesoro Logistics Operations operates a loading rack at a bulk gasoline terminal and is subject to §63.422 (a). This is assured by Permit Condition 3.8.

(b) Emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline cargo tanks shall not exceed 10 milligrams of total organic compounds per liter of gasoline loaded.

Tesoro Logistics Operations operates a loading rack with a vapor collection unit at a bulk gasoline terminal and is subject to §63.422 (b). This is assured by Permit Condition 3.8.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall comply with §60.502(e) of this chapter as follows:

(1) For the purposes of this section, the term “tank truck” as used in §60.502(e) of this chapter means “cargo tank.”

(2) Section 60.502(e)(5) of this chapter is changed to read: The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline cargo tank will not be reloaded at the facility until vapor tightness documentation for that gasoline cargo tank is obtained which documents that:

(i) The tank truck or railcar gasoline cargo tank meets the test requirements in §63.425(e), or the railcar gasoline cargo tank meets applicable test requirements in §63.425(i);

(ii) For each gasoline cargo tank failing the test in §63.425 (f) or (g) at the facility, the cargo tank either:

(A) Before repair work is performed on the cargo tank, meets the test requirements in §63.425 (g) or (h), or

(B) After repair work is performed on the cargo tank before or during the tests in §63.425 (g) or (h), subsequently passes the annual certification test described in §63.425(e).

As shown in the NSPS applicability analysis Tesoro Logistics Operations is subject to §60.502 through reference in §63.422(c) and §60.502(e) has been changed to read as outlined above. This is assured by Permit Condition 3.8.

(d) Each owner or operator shall meet the requirements in all paragraphs of this section as expeditiously as practicable, but no later than December 15, 1997, at existing facilities and upon startup for new facilities.

Tesoro Logistics Operations is required to comply with §63.422(d) because it was constructed before December 15, 1997. Since compliance has been shown in previous permits, this condition is no longer applicable.

(e) As an alternative to 40 CFR 60.502(h) and (i) as specified in paragraph (a) of this section, the owner or operator may comply with paragraphs (e)(1) and (2) of this section.

(1) The owner or operator shall design and operate the vapor processing system, vapor collection system, and liquid loading equipment to prevent gauge pressure in the railcar gasoline cargo tank from exceeding the applicable test limits in §63.425(e) and (i) during product loading. This level is not to be exceeded when measured by the procedures specified in 40 CFR 60.503(d) of this chapter.

(2) No pressure-vacuum vent in the bulk gasoline terminal's vapor processing system or vapor collection system may begin to open at a system pressure less than the applicable test limits in §63.425(e) or (i).

Tesoro Logistics Operations is subject to §60.502(h) and (i) and §63.422 and has the option to comply with §63.422(e) as an alternative to §60.502(h) and (i). This is assured by Permit Condition 3.8.

§ 63.423 .... Standards: Storage vessels.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall equip each gasoline storage vessel with a design capacity greater than or equal to 75 m^3 according to the requirements in §60.112b(a) (1) through (4) of this chapter, except for the requirements in §§60.112b(a)(1) (iv) through (ix) and 60.112b(a)(2)(ii) of this chapter.

As discussed in the NSPS applicability Tesoro Logistics Operations is subject to the requirements outlined in 40 CFR 60 Subpart Kb for all gasoline storage tanks. This is assured by Permit Condition 4.7.

(b) Each owner or operator shall equip each gasoline external floating roof storage vessel with a design capacity greater than or equal to 75 m^3 according to the requirements in §60.112b(a)(2)(ii) of this chapter if such storage vessel does not currently meet the requirements in paragraph (a) of this section.

Tesoro Logistics Operations has installed internal floating roofs for all storage tanks subject to 40 CFR 60 Subpart Kb, however if tanks are not equipped with internal floating roofs the facility must comply with §63.423(b). This is assured by Permit Condition 4.7.

(c) Each gasoline storage vessel at existing bulk gasoline terminals and pipeline breakout stations shall be in compliance with the requirements in paragraphs (a) and (b) of this section as expeditiously as practicable, but no later than December 15, 1997. At new bulk gasoline terminals and pipeline breakout stations, compliance shall be achieved upon startup.

Tesoro Logistics Operations is required to comply with §63.423(c) because it was constructed before December 15, 1997. Since compliance has been shown in previous permits, this condition is no longer applicable.

§63.424 .... Standards: Equipment Leaks.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall perform a monthly leak inspection of all equipment in gasoline service. For this inspection, detection methods incorporating sight, sound, and smell are acceptable. Each piece of equipment shall be inspected during the loading of a gasoline cargo tank.

(b) A log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

(c) Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak, except as provided in paragraph (d) of this section.

(d) Delay of repair of leaking equipment will be allowed upon a demonstration to the Administrator that repair within 15 days is not feasible. The owner or operator shall provide the reason(s) a delay is needed and the date by which each repair is expected to be completed.

(e) Initial compliance with the requirements in paragraphs (a) through (d) of this section shall be achieved by existing sources as expeditiously as practicable, but no later than December 15, 1997. For new sources, initial compliance shall be achieved upon startup.

(f) As an alternative to compliance with the provisions in paragraphs (a) through (d) of this section, owners or operators may implement an instrument leak monitoring program that has been demonstrated to the Administrator as at least equivalent.

(g) Owners and operators shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

(3) Cover all open gasoline containers with a gasketed seal when not in use;

(4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

Tesoro Logistics Operations is required to comply with §63.424 because the facility is subject to this subpart as shown in §63.420. Compliance with §63.424(e) has been shown in previously issued Tier II Operating permits. This is assured by Permit Condition 3.9.

§ 63.425.. Test methods and procedures.

(a) Each owner or operator subject to the emission standard in §63.422(b) or 40 CFR 60.112b(a)(3)(ii) shall comply with the requirements in paragraphs (a)(1) and (2) of this section.

(1) Conduct a performance test on the vapor processing and collection systems according to either paragraph (a)(1)(i) or (ii) of this section.

(i) Use the test methods and procedures in 40 CFR 60.503 of this chapter, except a reading of 500 ppm shall be used to determine the level of leaks to be repaired under 40 CFR 60.503(b), or

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

(2) The performance test requirements of 40 CFR 60.503(c) do not apply to flares defined in §63.421 and meeting the flare requirements in §63.11(b). The owner or operator shall demonstrate that the flare and associated vapor collection system is in compliance with the requirements in §63.11(b) and 40 CFR 60.503(a), (b), and (d), respectively.

Tesoro Logistics Operations is subject to §63.422(b) and is therefore required to comply with §63.425(a)(1). The Vapor Combustion Unit does not fit the definition of flare as defined by §63.421.This is assured by Permit Condition 3.10.

(b) For each performance test conducted under paragraph (a) of this section, the owner or operator shall determine a monitored operating parameter value for the vapor processing system using the following procedure:

(1) During the performance test, continuously record the operating parameter under §63.427(a);

(2) Determine an operating parameter value based on the parameter data monitored during the performance test, supplemented by engineering assessments and the manufacturer's recommendations; and

(3) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency and averaging time, including data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the emission standard in §63.422(b) or §60.112b(a)(3)(ii) of this chapter.

Tesoro Logistics Operations operates a Vapor Combustion Unit and therefore the performance tests conducted are subject to §63.425(b). This is assured by Permit Condition 3.10.

(c) For performance tests performed after the initial test, the owner or operator shall document the reasons for any change in the operating parameter value since the previous performance test.

Tesoro Logistics Operations operates a Vapor Combustion Unit and therefore the performance tests conducted are subject to §63.425(c). This is assured by Permit Condition 3.10.

(d) The owner or operator of each gasoline storage vessel subject to the provisions of §63.423 shall comply with §60.113b of this chapter. If a closed vent system and control device are used, as specified in §60.112b(a)(3) of this chapter, to comply with the requirements in §63.423, the owner or operator shall also comply with the requirements in paragraph (b) of this section.

Tesoro Logistics Operations is subject to the provisions of §63.423 as shown above and is subject to §63.425(d). This is assured by Permit Condition 4.9.

(e) *Annual certification test.* The annual certification test for gasoline cargo tanks shall consist of the following test methods and procedures:

(1) Method 27, appendix A, 40 CFR part 60. Conduct the test using a time period (t) for the pressure and vacuum tests of 5 minutes. The initial pressure (P_i) for the pressure test shall be 460 mm H_2O (18 in. H_2O), gauge. The initial vacuum (V_i) for the vacuum test shall be 150 mm H_2O (6 in. H_2O), gauge. The maximum allowable pressure and vacuum changes (Δ p, Δ v) are as shown in the second column of Table 2 of this paragraph.

1. TABLE 2—ALLOWABLE CARGO TANK TEST PRESSURE OR VACUUM CHANGE

Cargo tank or compartment capacity, liters (gal)	Annual certification-allowable pressure or vacuum change (Δ p, Δ v) in 5 minutes, mm H_2O (in. H_2O)	Allowable pressure change (Δ p) in 5 minutes at any time, mm H_2O (in. H_2O)
9,464 or more (2,500 or more)	25 (1.0)	64 (2.5)
9,463 to 5,678 (2,499 to 1,500)	38 (1.5)	76 (3.0)
5,679 to 3,785 (1,499 to 1,000)	51 (2.0)	89 (3.5)
3,782 or less (999 or less)	64 (2.5)	102 (4.0)

(2) Pressure test of the cargo tank's internal vapor valve as follows:

(i) After completing the tests under paragraph (e)(1) of this section, use the procedures in Method 27 to repressurize the tank to 460 mm H_2O (18 in. H_2O), gauge. Close the tank's internal vapor valve(s), thereby isolating the vapor return line and manifold from the tank.

(ii) Relieve the pressure in the vapor return line to atmospheric pressure, then reseal the line. After 5 minutes, record the gauge pressure in the vapor return line and manifold. The maximum allowable 5-minute pressure increase is 130 mm H_2O (5 in. H_2O).

Tesoro Logistics Operations loads gasoline cargo tanks and is subject to the annual certification test as specified in §63.425(e). This is assured by Permit Condition 3.12.

(f) *Leak detection test.* The leak detection test shall be performed using Method 21, appendix A, 40 CFR part 60, except omit section 4.3.2 of Method 21. A vapor-tight gasoline cargo tank shall have no leaks at any time when tested according to the procedures in this paragraph.

(1) The leak definition shall be 21,000 ppm as propane. Use propane to calibrate the instrument, setting the span at the leak definition. The response time to 90 percent of the final stable reading shall be less than 8 seconds for the detector with the sampling line and probe attached.

(2) In addition to the procedures in Method 21, include the following procedures:

(i) Perform the test on each compartment during loading of that compartment or while the compartment is still under pressure.

(ii) To eliminate a positive instrument drift, the dwell time for each leak detection shall not exceed two times the instrument response time. Purge the instrument with ambient air between each leak detection. The duration of the purge shall be in excess of two instrument response times.

(iii) Attempt to block the wind from the area being monitored. Record the highest detector reading and location for each leak.

Tesoro Logistics Operations loads gasoline cargo tanks and is subject to the leak detection test §63.425(f). This is assured by Permit Condition 3.12.

(g) *Nitrogen pressure decay field test.* For those cargo tanks with manifolded product lines, this test procedure shall be conducted on each compartment.

(1) Record the cargo tank capacity. Upon completion of the loading operation, record the total volume loaded. Seal the cargo tank vapor collection system at the vapor coupler. The sealing apparatus shall have a pressure tap. Open the internal vapor valve(s) of the cargo tank and record the initial headspace pressure. Reduce or increase, as necessary, the initial headspace pressure to 460 mm H_2O (18.0 in. H_2O), gauge by releasing pressure or by adding commercial grade nitrogen gas from a high pressure cylinder capable of maintaining a pressure of 2,000 psig.

(i) The cylinder shall be equipped with a compatible two-stage regulator with a relief valve and a flow control metering valve. The flow rate of the nitrogen shall be no less than 2 cfm. The maximum allowable time to pressurize cargo tanks with headspace volumes of 1,000 gallons or less to the appropriate pressure is 4 minutes. For cargo tanks with a headspace of greater than 1,000 gallons, use as a maximum allowable time to pressurize 4 minutes or the result from the equation below, whichever is greater.

$T = V_h \times 0.004$

where:

T = maximum allowable time to pressurize the cargo tank, min;

V_h = cargo tank headspace volume during testing, gal.

(2) It is recommended that after the cargo tank headspace pressure reaches approximately 460 mm H_2O (18 in. H_20), gauge, a fine adjust valve be used to adjust the headspace pressure to 460 mm H_2O (18.0 in. H_2O), gauge for the next 30 ±5 seconds.

(3) Reseal the cargo tank vapor collection system and record the headspace pressure after 1 minute. The measured headspace pressure after 1 minute shall be greater than the minimum allowable final headspace pressure (P_F) as calculated from the following equation:

$$P_F = 18\left(\frac{(18-N)}{18}\right)^{\left(\frac{V_s}{5(V_h)}\right)}$$

where:

(P_F) = minimum allowable final headspace pressure, in. H_2O, gauge;

V_s = total cargo tank shell capacity, gal;

V_h = cargo tank headspace volume after loading, gal;

18.0 = initial pressure at start of test, in. H_2O, gauge;

N = 5-minute continuous performance standard at any time from the third column of Table 2 of §63.425(e)(i), inches H_2O.

(4) Conduct the internal vapor valve portion of this test by repressurizing the cargo tank headspace with nitrogen to 460 mm H_2O (18 in. H_2O), gauge. Close the internal vapor valve(s), wait for 30 ±5 seconds, then relieve the pressure downstream of the vapor valve in the vapor collection system to atmospheric pressure. Wait 15 seconds, then reseal the vapor collection system. Measure and record the pressure every minute for 5 minutes. Within 5 seconds of the pressure measurement at the end of 5 minutes, open the vapor valve and record the headspace pressure as the "final pressure."

(5) If the decrease in pressure in the vapor collection system is less than at least one of the interval pressure change values in Table 3 of this paragraph, or if the final pressure is equal to or greater than 20 percent of the 1-minute final headspace pressure determined in the test in paragraph (g)(3) of this section, then the cargo tank is considered to be a vapor-tight gasoline cargo tank.

2. Table 3—Pressure Change for Internal Vapor Valve Test

Time interval	Interval pressure change, mm H_2O (in. H_2O)
After 1 minute	28 (1.1)
After 2 minutes	56 (2.2)
After 3 minutes	84 (3.3)
After 4 minutes	112 (4.4)
After 5 minutes	140 (5.5)

Tesoro Logistics Operations loads cargo tanks with manifolded product lines and is subject to the nitrogen pressure decay field test as described in §63.425(g). This is assured by Permit Condition 3.12.

> (h) *Continuous performance pressure decay test.* The continuous performance pressure decay test shall be performed using Method 27, appendix A, 40 CFR Part 60. Conduct only the positive pressure test using a time period (t) of 5 minutes. The initial pressure (P_i) shall be 460 mm H_2O (18 in. H_2O), gauge. The maximum allowable 5-minute pressure change (Δ p) which shall be met at any time is shown in the third column of Table 2 of §63.425(e)(1).

Tesoro Logistics Operations loads gasoline cargo tanks and is subject to the continuous performance pressure decay test as described in§63.425(h). This is assured by Permit Condition 3.12.

> (i) *Railcar bubble leak test procedures.* As an alternative to paragraph (e) of this section for annual certification leakage testing of gasoline cargo tanks, the owner or operator may comply with paragraphs (i)(1) and (2) of this section for railcar gasoline cargo tanks, provided the railcar tank meets the requirement in paragraph (i)(3) of this section.
>
> (1) Comply with the requirements of 49 CFR 173.31(d), 179.7, 180.509, and 180.511 for the testing of railcar gasoline cargo tanks.
>
> (2) The leakage pressure test procedure required under 49 CFR 180.509(j) and used to show no indication of leakage under 49 CFR 180.511(f) shall be ASTM E 515-95 (incorporated by reference, see §63.14), BS EN 1593:1999 (incorporated by reference, see §63.14), or another bubble leak test procedure meeting the requirements in 49 CFR 179.7, 180.505, and 180.509.
>
> (3) The alternative requirements in this paragraph (i) may not be used for any railcar gasoline cargo tank that collects gasoline vapors from a vapor balance system permitted under or required by a Federal, State, local, or tribal agency. A vapor balance system is a piping and collection system designed to collect gasoline vapors displaced from a storage vessel, barge, or other container being loaded, and routes the displaced gasoline vapors into the railcar gasoline cargo tank from which liquid gasoline is being unloaded.

Tesoro Logistics Operations does not load railcar gasoline cargo tanks and is not subject to the requirements of §63.425(i).

§ 63.426 .... Alternative means of emission limitation.

For determining the acceptability of alternative means of emission limitation for storage vessels under §63.423, the provisions of §60.114b of this chapter apply.

Tesoro Logistics Operations has the option to use alternative means of emissions so long as they adhere to §63.423 and §60.114b. This is assured by Permit Condition 4.10.

§ 63.427 .... Continuous monitoring.

(a) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring system (CMS) as specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, except as allowed in paragraph (a)(5) of this section.

(1) Where a carbon adsorption system is used, a continuous emission monitoring system (CEMS) capable of measuring organic compound concentration shall be installed in the exhaust air stream.

(2) Where a refrigeration condenser system is used, a continuous parameter monitoring system (CPMS) capable of measuring temperature shall be installed immediately downstream from the outlet to the condenser section. Alternatively, a CEMS capable of measuring organic compound concentration may be installed in the exhaust air stream.

(3) Where a thermal oxidation system other than a flare is used, a CPMS capable of measuring temperature must be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

(4) Where a flare meeting the requirements in §63.11(b) is used, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, must be installed in proximity to the pilot light to indicate the presence of a flame.

(5) Monitoring an alternative operating parameter or a parameter of a vapor processing system other than those listed in this paragraph will be allowed upon demonstrating to the Administrator's satisfaction that the alternative parameter demonstrates continuous compliance with the emission standard in §63.422(b) or §60.112b(a)(3)(ii) of this chapter.

Tesoro Logistics Operations owns and operates a bulk gasoline terminal and is subject to §63.427(a). Tesoro has not installed a carbon adsorption system, a refrigeration condenser system, or a flare meeting the requirements of §63.11(b) therefore §63.427(a)(1), §63.427(a)(2), and §63.427(a)(4) are not applicable. The facility does operate a thermal oxidation system and is subject to §63.427(a)(3). The facility also has the opportunity to monitor an alternative operating parameter if they so choose and are subject to §63.427(a)(5). This is assured by Permit Condition 3.11.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall operate the vapor processing system in a manner not to exceed the operating parameter value for the parameter described in paragraphs (a)(1) and (a)(2) of this section, or to go below the operating parameter value for the parameter described in paragraph (a)(3) of this section, and established using the procedures in §63.425(b). In cases where an alternative parameter pursuant to paragraph (a)(5) of this section is approved, each owner or operator shall operate the vapor processing system in a manner not to exceed or not to go below, as appropriate, the alternative operating parameter value. Operation of the vapor processing system in a manner exceeding or going below the operating parameter value, as specified above, shall constitute a violation of the emission standard in §63.422(b).

Tesoro Logistics Operations owns and operates a bulk gasoline terminal that is subject to this subpart and is subject to the requirements listed in §63.427(b). This is assured by Permit Condition 3.11.

(c) Each owner or operator of gasoline storage vessels subject to the provisions of §63.423 shall comply with the monitoring requirements in §60.116b of this chapter, except records shall be kept for at least 5 years. If a closed vent system and control device are used, as specified in §60.112b(a)(3) of this chapter, to comply with the requirements in §63.423, the owner or operator shall also comply with the requirements in paragraph (a) of this section.

Tesoro Logistics Operations owns and operates storage vessels subject to § 63.423 and is subject to the requirements listed in § 60.116b (outlined above under NSPS applicability) with the stipulation that records must be kept for at least 5 years. This is assured by Permit Condition 4.11.

§ 63.428 .... Reporting and recordkeeping.

(a) The initial notifications required for existing affected sources under §63.9(b)(2) shall be submitted by 1 year after an affected source becomes subject to the provisions of this subpart or by December 16, 1996, whichever is later. Affected sources that are major sources on December 16, 1996 and plan to be area sources by December 15, 1997 shall include in this notification a brief, non-binding description of and schedule for the action(s) that are planned to achieve area source status.

Tesoro Logistics Operations has already filed all initial notifications in previous permits. The initial notification as outlined in §63.428(a) are not applicable because they have been shown to be completed in previously issued Tier II operating permits.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall keep records of the test results for each gasoline cargo tank loading at the facility as follows:

(1) Annual certification testing performed under §63.425(e) and railcar bubble leak testing performed under §63.425(i); and

(2) Continuous performance testing performed at any time at that facility under §63.425 (f), (g), and (h).

(3) The documentation file shall be kept up-to-date for each gasoline cargo tank loading at the facility. The documentation for each test shall include, as a minimum, the following information:

(i) Name of test: Annual Certification Test—Method 27 (§63.425(e)(1)); Annual Certification Test—Internal Vapor Valve (§63.425(e)(2)); Leak Detection Test (§63.425(f)); Nitrogen Pressure Decay Field Test (§63.425(g)); Continuous Performance Pressure Decay Test (§63.425(h)); or Railcar Bubble Leak Test Procedure (§63.425(i)).

(ii) Cargo tank owner's name and address.

(iii) Cargo tank identification number.

(iv) Test location and date.

(v) Tester name and signature.

(vi) Witnessing inspector, if any: Name, signature, and affiliation.

(vii) Vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing.

(viii) Test results: test pressure; pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument; and leak definition.

Tesoro Logistics Operations owns and operates a bulk gasoline terminal and is subject to the reporting and recordkeeping requirements listed in §63.428(b). This is assured by Permit Condition 3.12.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall:

(1) Keep an up-to-date, readily accessible record of the continuous monitoring data required under §63.427(a). This record shall indicate the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, shall record the operating parameter data only during such loadings. The date and time of day shall also be indicated at reasonable intervals on this record.

(2) Record and report simultaneously with the notification of compliance status required under §63.9(h):

(i) All data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value under §63.425(b); and

(ii) The following information when using a flare under provisions of §63.11(b) to comply with §63.422(b):

(A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted); and

(B) All visible emissions readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required under §63.425(a).

(3) If an owner or operator requests approval to use a vapor processing system or monitor an operating parameter other than those specified in §63.427(a), the owner or operator shall submit a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application.

Tesoro Logistics Operations owns and operates a bulk gasoline terminal and is subject to the reporting and recordkeeping requirements listed in §63.428(c). This is assured by Permit Condition 3.12.

(d) Each owner or operator of storage vessels subject to the provisions of this subpart shall keep records and furnish reports as specified in §60.115b of this chapter, except records shall be kept for at least 5 years.

Tesoro Logistics Operations owns and operates storage vessels that are subject to the provisions of this subpart and is subject to the reporting and recordkeeping requirements listed in §63.428(d). This is assured by Permit Condition 4.12.

(e) Each owner or operator complying with the provisions of §63.424 (a) through (d) shall record the following information in the log book for each leak that is detected:

(1) The equipment type and identification number;

(2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell);

(3) The date the leak was detected and the date of each attempt to repair the leak;

(4) Repair methods applied in each attempt to repair the leak;

(5) "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak;

(6) The expected date of successful repair of the leak if the leak is not repaired within 15 days; and

(7) The date of successful repair of the leak.

Tesoro Logistics Operations is subject to the provisions listed in §63.424(a) through (d) and is required to comply with the reporting and recordkeeping requirements listed in §63.428(e). This is assured by Permit Conditions 3.12 and 4.12.

(f) Each owner or operator subject to the provisions of §63.424 shall report to the Administrator a description of the types, identification numbers, and locations of all equipment in gasoline service. For facilities electing to implement an instrument program under §63.424(f), the report shall contain a full description of the program.

(1) In the case of an existing source or a new source that has an initial startup date before the effective date, the report shall be submitted with the notification of compliance status required under §63.9(h), unless an extension of compliance is granted under §63.6(i). If an extension of compliance is granted, the report shall be submitted on a date scheduled by the Administrator.

(2) In the case of new sources that did not have an initial startup date before the effective date, the report shall be submitted with the application for approval of construction, as described in §63.5(d).

Tesoro Logistics Operations is subject to the provisions listed in §63.424 and is required to comply with the reporting and recordkeeping requirements listed in §63.428(f). This is assured by Permit Conditions 3.12 and 4.12.

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall include in a semiannual report to the Administrator the following information, as applicable:

(1) Each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility;

(2) Periodic reports required under paragraph (d) of this section; and

(3) The number of equipment leaks not repaired within 5 days after detection.

Tesoro Logistics Operations owns and operates a bulk gasoline terminal and is subject to the provisions of this subpart and must comply with the reporting and recordkeeping requirements listed in §63.428(g). This is assured by Permit Conditions 3.12 and 4.12.

(h) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall submit an excess emissions report to the Administrator in accordance with §63.10(e)(3), whether or not a CMS is installed at the facility. The following occurrences are excess emissions events under this subpart, and the following information shall be included in the excess emissions report, as applicable:

(1) Each exceedance or failure to maintain, as appropriate, the monitored operating parameter value determined under §63.425(b). The report shall include the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the vapor collection and processing systems or the CMS.

(2) Each instance of a nonvapor-tight gasoline cargo tank loading at the facility in which the owner or operator failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained.

(3) Each reloading of a nonvapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tank is obtained by the facility in accordance with §63.422(c)(2).

(4) For each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:

(i) The date on which the leak was detected;

(ii) The date of each attempt to repair the leak;

(iii) The reasons for the delay of repair; and

(iv) The date of successful repair.

Tesoro Logistics Operations owns and operates a bulk gasoline terminal and is subject to the provisions of this subpart and must comply with the reporting and recordkeeping requirements listed in § 63.428(h). This is assured by Permit Conditions 3.12 and 4.12.

(i) Each owner or operator of a facility meeting the criteria in §63.420(c) shall perform the requirements of this paragraph (i), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to §63.420(c) after December 16, 1996, or at startup for new facilities the methods, procedures, and assumptions supporting the calculations for determining criteria in §63.420(c);

(2) Maintain records to document that the facility parameters established under §63.420(c) have not been exceeded; and

(3) Report annually to the Administrator that the facility parameters established under §63.420(c) have not been exceeded.

(4) At any time following the notification required under paragraph (i)(1) of this section and approval by the Administrator of the facility parameters, and prior to any of the parameters being exceeded, the owner or operator may submit a report to request modification of any facility parameter to the Administrator for approval. Each such request shall document any expected HAP emission change resulting from the change in parameter.

Tesoro Logistics Operations is exempt from the requirements in §63.420(c) and is not subject to the requirements listed in §63.428(i).

(j) Each owner or operator of a facility meeting the criteria in §63.420(d) shall perform the requirements of this paragraph (j), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to §63.420(d) after December 16, 1996, or at startup for new facilities the use of the emission screening equations in §63.420(a)(1) or (b)(1) and the calculated value of E_T or E_P;

(2) Maintain a record of the calculations in §63.420 (a)(1) or (b)(1), including methods, procedures, and assumptions supporting the calculations for determining criteria in §63.420(d); and

(3) At any time following the notification required under paragraph (j)(1) of this section, and prior to any of the parameters being exceeded, the owner or operator may notify the Administrator of modifications to the facility parameters. Each such notification shall document any expected HAP emission change resulting from the change in parameter.

Tesoro Logistics Operations is exempt from the requirements in §63.420(d) and is not subject to the requirements listed in §63.428(j).

(k) As an alternative to keeping records at the terminal of each gasoline cargo tank test result as required in paragraph (b) of this section, an owner or operator may comply with the requirements in either paragraph (k)(1) or (2) of this section.

(1) An electronic copy of each record is instantly available at the terminal.

(i) The copy of each record in paragraph (k)(1) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (k)(1) of this section.

(2) For facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame.

(i) The copy of each record in paragraph (k)(2) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (k)(2) of this section.

Tesoro Logistics Operations has the opportunity to comply with §63.428(k) in the place of §63.428(b). If the facility complies with the alternative recordkeeping they are subject to §63.428(k). This is assured by Permit Condition 3.12.

§ 63.429 .... Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§63.420, 63.422 through 63.423, and 63.424. Any owner or operator requesting to use an alternative means of emission limitation for storage vessels covered by §63.423 must follow the procedures in §63.426.

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f), as defined in §63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under §63.8(f), as defined in §63.90, and as required in this subpart, and any alternatives to §63.427(a)(1) through (4) per §63.427(a)(5).

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

Tesoro Logistics Operations is not subject to §63.429(a) through (c). This section is outlining requirements for regulatory agencies.

Table 1 to Subpart R of Part 63—General Provisions Applicability to Subpart R

Reference	Applies to subpart R	Comment
63.1(a)(1)	Yes	
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	Section reserved
63.1(a)(6)(8)	Yes	
63.1(a)(9)	No	Section reserved
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12))-(a)(14)	Yes	
63.1(b)(1)	No	Subpart R specifies applicability in §63.420
63.1(b)(2)	Yes	
63.1(b)(3)	No	Subpart R specifies reporting and recordkeeping for some large area sources in §63.428
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Some small sources are not subject to subpart R
63.1(c)(3)	No	Section reserved
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Section reserved
63.1(e)	Yes	
63.2	Yes	Additional definitions in §63.421
63.3(a)-(c)	Yes	
63.4(a)(1)-(a)(3)	Yes	
63.4(a)(4)	No	Section reserved

63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)(1)	Yes	
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Section reserved
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Section reserved
63.5(d)(1)	Yes	
63.5(d)(2)	Yes	
63.5(d)(3)	Yes	
63.5(d)(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)	Yes	
63.5(f)(2)	Yes	
63.6(a)	Yes	
63.6(b)(1)	Yes	
63.6(b)(2)	Yes	
63.6(b)(3)	Yes	
63.6(b)(4)	Yes	
63.6(b)(5)	Yes	
63.6(b)(6)	No	Section reserved
63.6(b)(7)	Yes	
63.6(c)(1)	No	Subpart R specifies the compliance date
63.6(c)(2)	Yes	
63.6(c)(3)-(c)(4)	No	Sections reserved
63.6(c)(5)	Yes	
63.6(d)	No	Section reserved
63.6(e)	Yes	

63.6(f)(1)	Yes	
63.6(f)(2)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h)	No	Subpart R does not require COMS
63.6(i)(1)-(i)(14)	Yes	
63.6(i)(15)	No	Section reserved
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)	Yes	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)(1)	Yes	
63.7(e)(2)	Yes	
63.7(e)(3)	Yes	
63.7(e)(4)	Yes	
63.7(f)	Yes	
63.7(g)	Yes	
63.7(h)	Yes	
63.8(a)(1)	Yes	
63.8(a)(2)	Yes	
63.8(a)(3)	No	Section reserved
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	Yes	
63.8(b)(3)	Yes	
63.8(c)(1)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	Yes	

63.8(c)(5)	No	Subpart R does not require COMS
63.8(c)(6)-(c)(8)	Yes	
63.8(d)	Yes	
63.8(e)	Yes	
63.8(f)(1)-(f)(5)	Yes	
63.8(f)(6)	Yes	
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	No	Subpart R allows additional time for existing sources to submit initial notification. Sec. 63.428(a) specifies submittal by 1 year after being subject to the rule or December 16, 1996, whichever is later.
63.9(b)(3)	Yes	
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	Yes	
63.9(g)	Yes	
63.9(h)(1)-(h)(3)	Yes	
63.9(h)(4)	No	Section reserved
63.9(h)(5)-(h)(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)	Yes	
63.10(b)(3)	Yes	
63.10(c)(1)	Yes	
63.10(c)(2)-(c)(4)	No	Sections reserved
63.10(c)(5)-(c)(8)	Yes	
63.10(c)(9)	No	Section reserved
63.10(c)(5)-(c)(8)	Yes	

63.10(d)(1)	Yes	
63.10(d)(2)	Yes	
63.10(d)(3)	Yes	
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	
63.10(e)	Yes	
63.10(f)	Yes	
63.11(a)-(b)	Yes	
63.11(c), (d), and (e)	Yes	
63.12(a)-(c)	Yes	
63.13(a)-(c)	Yes	
63.14(a)-(b)	Yes	
63.15(a)-(b)	Yes	

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Existing Permit Conditions 3.3 and 4.2

The permittee shall limit VOC emissions from the gasoline, diesel, and transmix loading rack to amounts not to exceed the ton-per-year values listed in Appendix A based on any consecutive 12-month period.

Revised Permit Conditions 3.3 and 4.3

The reference to the appendix has been removed to include the limits in table format for each emission unit.

Existing Permit Conditions 3.4 and 4.3

The permittee shall limit facility throughputs to amounts not to exceed the U.S. gallons or barrels per year values listed in Appendix B based on any consecutive 12-month period.

Revised Permit Conditions 3.4 and 4.4

The permittee shall limit throughputs to amounts not to exceed the following limits 370,800,990 U.S. Gallons or 8,828,595 barrels of gasoline, 2,520,000 U.S. Gallons or 60,000 barrels of transmix, and 191,453,010 U.S. Gallons or 4,558,405 barrels of diesel on any consecutive 12-month period.

This permit condition has been revised to remove the reference to the appendix table and to include limits for the loading rack and tanks. Limits are given in units of U.S. Gallons and Barrels.

Existing Permit Condition 3.11

Where a flare meeting the requirements in 40 CFR 63.11(b) is used, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, must be installed in proximity to the pilot light to indicate the presence of a flame.

Revised Permit Condition 3.11

Where a thermal oxidation system other than a flare is used, a CPMS capable of measuring temperature must be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

The applicant has indicated that the existing condition is incorrect (40 CFR 63.427(a)(4)) and should be changed to read as shown in the revised condition (40 CFR 63.427(a)(3)).

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were comments on the application and there was a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

Public Comment Period

{public comment period offered, modify as applicable} A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were/were not submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

{received} A response to public comments document has been crafted by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

APPENDIX A – EMISSIONS INVENTORIES

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

APPENDIX C – FACILITY DRAFT COMMENTS

No comments were received from the facility.

APPENDIX D – PROCESSING FEE

Inputs for Potential to Emit Calculations

Parameters, by Emission Unit	Pre-Project Values	UOM
Tanks		
Gasoline Throughput	370,800,990	gal/yr
Diesel Throughput	191,453,010	gal/yr
Transmix Throughput	2,520,000	gal/yr
Ethanol Throughput	41,200,110	gal/yr
Additive Throughputs by Tank		
A100	9,000	gal/yr
A101	4,000	gal/yr
A102	10,000	gal/yr
A105	9,000	gal/yr
A108	12,000	gal/yr
A110	6,000	gal/yr
A112	11,000	gal/yr
A113	11,000	gal/yr
A114	4,000	gal/yr
Total Additive Throughput	72,000	gal/yr
Gasoline in Denatured Ethanol	3.36%	vol%
Additive Speciations		
Tank Seals and Fittings		
Equipment Leak Fugitives		
Valves - Liquid	1,265	Components
Valves - Vapor	33	Components
Fittings - Liquid	1,265	Components
Fittings - Vapor	110	Components
Pump Seals - Liquid	61	Components
Others - Liquid	98	Components
Temperature Data		
Daily Average Ambient Temperature	46.35	°F
Average July Daily Temperature	70.55	°F
Loading Rack Emissions		
Gasoline Throughput	370,800,990	gal/yr
Diesel Throughput	191,453,010	gal/yr
Transmix Throughput	2,520,000	gal/yr
Gasoline Short-term Throughput	5,500	gpm
Diesel Short-term Throughput	3,300	gpm
Transmix Short-term throughput	550	gpm
Saturation Factor	0.60	Unitless
Gasoline Loading VOC Factor	10	mg/L

Average Control Efficiency	95%	
Capture Efficiency	99.2%	
Natural Gas Combustion		
VCU Natural Gas Combustion	0.5	MMscf/yr
Space Heaters/Comfort Heaters	105,000	Btu/hr
Heater #1	105,000	Btu/hr

Notes

Facility-wide throughput for all tanks; apportioned to each tank in proportion with its capacity.

0.43 Turnovers/yr of OGA 72040
0.67 Turnovers/yr of Nemo 1124E
2.50 Turnovers/yr of Innospec RT-2W/80
4.50 Turnovers/yr of Keropur AP-205-20
1.60 Turnovers/yr of HiTec 6590
1.50 Turnovers/yr of HiTech 6610
1.69 Turnovers/yr of OLI-9103.x
1.41 Turnovers/yr of OLI-9103.x
2.50 Turnovers/yr of Unisol Red Dye - BK 50

Ethanol assigned to Tank 916 consistent with 2012 annual EI.

Based on MSDS
Based on 2012 annual EI TANKS 4.0.9d files

Components in VOC service should be included. Component counts are from the 2012 AEI. As in the AEI, the actuals reported by Chevron are multiplied by 1.1.

Based on TANKS 4.0.9d MET data tables for Pocatello, ID.
Based on TANKS 4.0.9d MET data tables for Pocatello, ID.

Gasoline throughput is volumetric and should include blended additives and ethanol.

550 gpm loading arms, 10x gasoline on site. Assumed all operational at once.
550 gpm loading arms, 6x diesel on site. Assumed all operational at once.
550 gpm loading arm, only one transmix loading arm on site.
A saturation factor of 0.5 was used for the 2008 application; a value of 0.5 implies submerged loading of a clean cargo tank. More realistically, 0.6 assumes submerged loading of a tank in dedicated normal service.

Factor based on applicable NESHAP R with assumed 100% VOC/TOC.

This control efficiency is applied to loading of fuels other than gasoline. Chevron assumed 98% based on the VCU's source test results. In order not to use a source test to determine PTE, a value of 95% is taken based on the midpoint of the 90% to 99% range estimated in AP-42.

The unit is required to participate in NESHAP R leak testing.

Post-Project Values	UOM

0.5	MMscf/yr
105,000	Btu/hr
105,000	Btu/hr

Notes

Species Name	CAS No.	TANKS CAS No.	HAP?	
1,2,4-Trimethyl benzene	95-63-6	00095-63-6	NO	
1,3,5-Triethyl benzene	102-25-0	00102-25-0	NO	
2,2,4-Trimethyl pentane (Isooctane)	540-84-1	00540-84-1	YES	
2-Ethylhexyl nitrate	27247-96-7	27247-96-7	NO	
Benzene	71-43-2	00071-43-2	YES	
Biphenyl	92-52-4	00092-52-4	YES	
C. I. Solvent Red 164	92257-31-3	92257-31-3	NO	
Cresol	1319-77-3	00108-39-4	YES	Note: m-creso
Ethanol	64-17-5	00064-17-5	NO	
Ethyl benzene	100-41-4	00100-41-4	YES	
Hexane (-n)	110-54-3	00110-54-3	YES	
Isopropyl Benzene (Cumene)	98-82-8	00098-82-8	YES	
Methanol	67-56-1	00067-56-1	YES	
Naphthalene	91-20-3	00091-20-3	YES	
Phenol	108-95-2	00108-95-2	YES	
Styrene	100-42-5	00100-42-5	YES	
Toluene	108-88-3	00108-88-3	YES	
Xylenes	1330-20-7	01330-20-7	YES	
Kerosene Mixture	8008-20-6		YES	Note: assume
Heavy Aromatic Solvent Naphtha (Petroleum)	64742-94-5		YES	Note: assume
Light Aromatic Solvent Naphtha (Petroleum)	64742-95-6		YES	Note: assume
n-Propyl benzene	103-65-1		NO	
2-Ethyl hexanol	104-76-7		NO	
1,2,3-Trimethyl benzene	526-73-8		NO	
Furan	110-00-9		NO	
Acetaldehyde	75-07-0		YES	
Vinyl acetate	108-05-4		YES	
1,3,5-Trimethyl benzene	108-67-8		NO	
Propylene Oxide	75-56-9		YES	

TABLE FIN			

l is used to represent cresols in TANKS.

d HAP for conservatism.

d HAP for conservatism.

d HAP for conservatism. Contains xylene.

Monthly Emissions Summary

Reporting Year

Tank ID	Tab Name (Manually fill in if not equal to Tank ID)	Tank Roof Type
Note: Must match exactly.		TKroof
Pocatello Tank 901 Post-Project	Pocatello Tank 901 Post-Project	VFR - Cone
Pocatello Tank 902 Post-Project	Pocatello Tank 902 Post-Project	IFR - Column Supported Roof
Pocatello Tank 903 Post-Project	Pocatello Tank 903 Post-Project	VFR - Cone
Pocatello Tank 905 Post-Project	Pocatello Tank 905 Post-Project	VFR - Cone
Pocatello Tank 906 Post-Project	Pocatello Tank 906 Post-Project	VFR - Cone
Pocatello Tank 907 Post-Project	Pocatello Tank 907 Post-Project	IFR - Column Supported Roof
Pocatello Tank 908 Post-Project	Pocatello Tank 908 Post-Project	VFR - Cone
Pocatello Tank 911 Post-Project	Pocatello Tank 911 Post-Project	IFR - Self Supporting Roof
Pocatello Tank 914 Post-Project	Pocatello Tank 914 Post-Project	IFR - Column Supported Roof
Pocatello Tank 915 Post-Project	Pocatello Tank 915 Post-Project	IFR - Column Supported Roof
Pocatello Tank 916 Post-Project	Pocatello Tank 916 Post-Project	IFR - Column Supported Roof
Pocatello Tank 917 Post-Project	Pocatello Tank 917 Post-Project	VFR - Cone
Pocatello Tank 918 Post-Project	Pocatello Tank 918 Post-Project	IFR - Column Supported Roof
Pocatello Tank 919 Post-Project	Pocatello Tank 919 Post-Project	IFR - Column Supported Roof
Pocatello Tank 920 Post-Project	Pocatello Tank 920 Post-Project	IFR - Column Supported Roof
Pocatello Tank 921 Post-Project	Pocatello Tank 921 Post-Project	IFR - Column Supported Roof
Pocatello Tank 922 Post-Project	Pocatello Tank 922 Post-Project	IFR - Column Supported Roof
Pocatello Tank 930 Post-Project	Pocatello Tank 930 Post-Project	VFR - Cone
Pocatello Tank A100 PostProject	Pocatello Tank A100 PostProject	VFR - Cone
Pocatello Tank A101 PostProject	Pocatello Tank A101 PostProject	HFR
Pocatello Tank A102 PostProject	Pocatello Tank A102 PostProject	HFR
Pocatello Tank A105 PostProject	Pocatello Tank A105 PostProject	HFR
Pocatello Tank A108 PostProject	Pocatello Tank A108 PostProject	HFR
Pocatello Tank A110 PostProject	Pocatello Tank A110 PostProject	HFR
Pocatello Tank A112 PostProject	Pocatello Tank A112 PostProject	HFR
Pocatello Tank A113 PostProject	Pocatello Tank A113 PostProject	HFR
Pocatello Tank A114 PostProject	Pocatello Tank A114 PostProject	HFR

2015	Check that Routine Emissions are In Range of Speciation Profiles. If "Error", refer to row 93 on individual tabs.	1	2	3	4	5
Annual VOC Total (tpy)		Jan	Feb	Mar	Apr	May
0.184865493	All In Range	15.02756	13.8145	16.35431	23.70091	35.64645
1.992577608	All In Range	185.8227	191.6771	250.0984	294.4908	371.163
0.174288915	All In Range	14.1381	13.00289	15.40419	22.3409	33.617
0.184475524	All In Range	15.05514	13.82838	16.35039	23.66188	35.55432
0.188738655	All In Range	15.39256	14.14043	16.72312	24.20726	36.37947
0.046948778	All In Range	7.720946	6.973757	7.720946	7.560218	8.001109
0.185487431	All In Range	15.01364	13.8142	16.37613	23.76882	35.78491
0.071025081	All In Range	11.95973	10.80233	11.95973	11.6165	12.07949
2.180712544	All In Range	183.364	190.5882	252.0881	303.9617	396.8321
2.615650325	All In Range	217.6133	226.8131	300.8974	363.9094	476.3072
0.181528961	All In Range	20.55516	19.88019	24.28566	26.95614	32.63953
0.378677963	All In Range	30.91655	28.39521	33.57012	48.57508	72.98115
0.081220785	All In Range	13.50611	12.19907	13.50611	13.17142	13.82642
2.659372029	All In Range	221.1741	230.1596	304.9133	368.4995	482.6083
2.646306668	All In Range	219.9622	228.9322	303.3355	366.6518	480.2541
4.496351341	All In Range	377.0734	392.199	519.141	626.4389	818.3584
4.746273765	All In Range	394.763	410.7937	544.2059	657.6816	861.3244
0	All In Range	0	0	0	0	0
0.018987667	All In Range	0.6112	0.782516	1.372401	2.260626	3.59152
0.005599289	All In Range	0.180382	0.230313	0.402562	0.661832	1.054036
0.004406456	All In Range	0.159118	0.198396	0.335211	0.531926	0.832149
0.002536159	All In Range	0.09984	0.122464	0.201887	0.311692	0.480442
0.008932454	All In Range	0.302118	0.381812	0.657807	1.065524	1.684173
0.003993612	All In Range	0.136611	0.172231	0.295709	0.477296	0.753129
0.006168258	All In Range	0.215432	0.27046	0.461552	0.740203	1.164067
0.007321622	All In Range	0.250454	0.315756	0.542134	0.875043	1.380737
0.002322034	All In Range	0.080787	0.10151	0.173446	0.27851	0.43823

Total Losses(lbs)

6	7	8	9	10	11	12	1	2	3
Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
48.24767	64.19673	58.48879	39.51666	25.42671	14.41186	14.89885	15.02756	13.8145	16.35431
444.1451	554.6078	528.982	407.181	326.68	238.2001	192.1073	185.8227	191.6771	250.0984
45.51621	60.57765	55.1798	37.26283	23.96037	13.56219	14.01571	14.1381	13.00289	15.40419
48.08793	63.94688	58.28648	39.42057	25.39852	14.43194	14.92863	15.05514	13.82838	16.35039
49.20942	65.44368	59.64664	40.33402	25.98135	14.75658	15.26277	15.39256	14.14043	16.72312
7.99359	8.525647	8.457237	7.881538	7.869741	7.471883	7.720946	7.720946	6.973757	7.720946
48.47303	64.53689	58.77123	39.66351	25.48466	14.40544	14.88238	15.01364	13.8142	16.37613
11.78827	12.28547	12.25622	11.74318	12.02558	11.57393	11.95973	11.95973	10.80233	11.95973
502.5778	679.6108	633.0615	448.7999	340.9389	239.7236	189.8784	183.364	190.5882	252.0881
604.6046	818.9959	762.5846	539.4333	408.5723	286.0617	225.5078	217.6133	226.8131	300.8974
38.08149	46.96892	44.90999	35.21135	29.41524	23.26323	20.89101	20.55516	19.88019	24.28566
98.69909	131.2381	119.6276	80.91758	52.14264	29.63561	30.65721	30.91655	28.39521	33.57012
13.66689	14.42611	14.34789	13.53878	13.67623	13.07043	13.50611	13.50611	12.19907	13.50611
614.4625	838.2337	778.616	547.3272	413.7437	289.9088	229.0973	221.1741	230.1596	304.9133
611.54	834.3255	774.9683	544.6981	411.6904	288.4045	227.8508	219.9622	228.9322	303.3355
1037.022	1402.924	1306.696	925.8511	702.815	493.6448	390.5399	377.0734	392.199	519.141
1096.633	1495.982	1389.586	976.8215	738.4271	517.4268	408.9029	394.763	410.7937	544.2059
0	0	0	0	0	0	0	0	0	0
5.490302	8.098137	7.279432	4.26099	2.562512	1.030879	0.634819	0.6112	0.782516	1.372401
1.617973	2.400805	2.154002	1.253779	0.750995	0.304358	0.18754	0.180382	0.230313	0.402562
1.251972	1.834675	1.652548	0.984157	0.602804	0.263902	0.166053	0.159118	0.198396	0.335211
0.71036	1.029084	0.930317	0.565339	0.352823	0.163618	0.104451	0.09984	0.122464	0.201887
2.563377	3.783017	3.399923	1.998275	1.208348	0.505924	0.314611	0.302118	0.381812	0.657807
1.144135	1.686675	1.516388	0.893136	0.541217	0.22838	0.142316	0.136611	0.172231	0.295709
1.761675	2.590616	2.330888	1.378905	0.839111	0.359032	0.224575	0.215432	0.27046	0.461552
2.097581	3.092238	2.780045	1.637415	0.992231	0.418696	0.260913	0.250454	0.315756	0.542134
0.663581	0.976056	0.878134	0.51917	0.31573	0.134712	0.084203	0.080787	0.10151	0.173446

Normal Operation Loss(lbs)									
4	5	6	7	8	9	10	11	12	1
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
23.70091	35.64645	48.24767	64.19673	58.48879	39.51666	25.42671	14.41186	14.89885	0
294.4908	371.163	444.1451	554.6078	528.982	407.181	326.68	238.2001	192.1073	0
22.3409	33.617	45.51621	60.57765	55.1798	37.26283	23.96037	13.56219	14.01571	0
23.66188	35.55432	48.08793	63.94688	58.28648	39.42057	25.39852	14.43194	14.92863	0
24.20726	36.37947	49.20942	65.44368	59.64664	40.33402	25.98135	14.75658	15.26277	0
7.560218	8.001109	7.99359	8.525647	8.457237	7.881538	7.869741	7.471883	7.720946	0
23.76882	35.78491	48.47303	64.53689	58.77123	39.66351	25.48466	14.40544	14.88238	0
11.6165	12.07949	11.78827	12.28547	12.25622	11.74318	12.02558	11.57393	11.95973	0
303.9617	396.8321	502.5778	679.6108	633.0615	448.7999	340.9389	239.7236	189.8784	0
363.9094	476.3072	604.6046	818.9959	762.5846	539.4333	408.5723	286.0617	225.5078	0
26.95614	32.63953	38.08149	46.96892	44.90999	35.21135	29.41524	23.26323	20.89101	0
48.57508	72.98115	98.69909	131.2381	119.6276	80.91758	52.14264	29.63561	30.65721	0
13.17142	13.82642	13.66689	14.42611	14.34789	13.53878	13.67623	13.07043	13.50611	0
368.4995	482.6083	614.4625	838.2337	778.616	547.3272	413.7437	289.9088	229.0973	0
366.6518	480.2541	611.54	834.3255	774.9683	544.6981	411.6904	288.4045	227.8508	0
626.4389	818.3584	1037.022	1402.924	1306.696	925.8511	702.815	493.6448	390.5399	0
657.6816	861.3244	1096.633	1495.982	1389.586	976.8215	738.4271	517.4268	408.9029	0
0	0	0	0	0	0	0	0	0	0
2.260626	3.59152	5.490302	8.098137	7.279432	4.26099	2.562512	1.030879	0.634819	0
0.661832	1.054036	1.617973	2.400805	2.154002	1.253779	0.750995	0.304358	0.18754	0
0.531926	0.832149	1.251972	1.834675	1.652548	0.984157	0.602804	0.263902	0.166053	0
0.311692	0.480442	0.71036	1.029084	0.930317	0.565339	0.352823	0.163618	0.104451	0
1.065524	1.684173	2.563377	3.783017	3.399923	1.998275	1.208348	0.505924	0.314611	0
0.477296	0.753129	1.144135	1.686675	1.516388	0.893136	0.541217	0.22838	0.142316	0
0.740203	1.164067	1.761675	2.590616	2.330888	1.378905	0.839111	0.359032	0.224575	0
0.875043	1.380737	2.097581	3.092238	2.780045	1.637415	0.992231	0.418696	0.260913	0
0.27851	0.43823	0.663581	0.976056	0.878134	0.51917	0.31573	0.134712	0.084203	0

Check that Non-Routine Emissions are In Range of Speciation Profil Error

Non-Routine Events - Roof Landings and Tank Cleanings(lbs)

2	3	4	5	6	7	8	9	10	11
Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

12
Dec
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

Monthly Speciated Emission Summary

Note: Any petroleum distillates or crude oils that appear in this speciated emission summary are incorporated into a liquid mixture with other organic liquids or products. This most often occurs when a distillate or crude is used in a full speciation profile of a liquid mixture.

Tank ID	Tab Name	Tank Roof Type
Note: Must match exactly.		TKroof
Pocatello Tank 901 Post-Project	Pocatello Tank 901 Post-Project	*VFR - Cone*
Pocatello Tank 902 Post-Project	Pocatello Tank 902 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 903 Post-Project	Pocatello Tank 903 Post-Project	*VFR - Cone*
Pocatello Tank 905 Post-Project	Pocatello Tank 905 Post-Project	*VFR - Cone*
Pocatello Tank 906 Post-Project	Pocatello Tank 906 Post-Project	*VFR - Cone*
Pocatello Tank 907 Post-Project	Pocatello Tank 907 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 908 Post-Project	Pocatello Tank 908 Post-Project	*VFR - Cone*
Pocatello Tank 911 Post-Project	Pocatello Tank 911 Post-Project	*IFR - Self Supporting Roof*
Pocatello Tank 914 Post-Project	Pocatello Tank 914 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 915 Post-Project	Pocatello Tank 915 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 916 Post-Project	Pocatello Tank 916 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 917 Post-Project	Pocatello Tank 917 Post-Project	*VFR - Cone*
Pocatello Tank 918 Post-Project	Pocatello Tank 918 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 919 Post-Project	Pocatello Tank 919 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 920 Post-Project	Pocatello Tank 920 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 921 Post-Project	Pocatello Tank 921 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 922 Post-Project	Pocatello Tank 922 Post-Project	*IFR - Column Supported Roof*
Pocatello Tank 930 Post-Project	Pocatello Tank 930 Post-Project	*VFR - Cone*
Pocatello Tank A100 PostProject	Pocatello Tank A100 PostProject	*VFR - Cone*
Pocatello Tank A101 PostProject	Pocatello Tank A101 PostProject	*HFR*
Pocatello Tank A102 PostProject	Pocatello Tank A102 PostProject	*HFR*
Pocatello Tank A105 PostProject	Pocatello Tank A105 PostProject	*HFR*
Pocatello Tank A108 PostProject	Pocatello Tank A108 PostProject	*HFR*
Pocatello Tank A110 PostProject	Pocatello Tank A110 PostProject	*HFR*
Pocatello Tank A112 PostProject	Pocatello Tank A112 PostProject	*HFR*
Pocatello Tank A113 PostProject	Pocatello Tank A113 PostProject	*HFR*
Pocatello Tank A114 PostProject	Pocatello Tank A114 PostProject	*HFR*

Reporting Year	

	Speciated Emissions (lb/year)				
Speciation ID	1	2	3	4	5
Speciated Pollutant	Hexane (-n)	Benzene	2,2,4-Trimethylpentane (isooctane)	Toluene	Ethylbenzene
CAS #	00110-54-3	00071-43-2	00540-84-1	00108-88-3	00100-41-4
Total Speciated Emissions	**378.27**	**126.97**	**148.44**	**277.29**	**34.98**
	24.21	0.00	5.65	13.08	2.51
	14.71	8.51	6.68	9.99	0.63
	22.82	0.00	5.33	12.33	2.36
	24.16	0.00	5.64	13.05	2.50
	24.71	0.00	5.77	13.35	2.56
	0.53	0.00	0.13	0.31	0.08
	24.29	0.00	5.67	13.12	2.52
	0.22	0.00	0.06	0.18	0.06
	21.51	13.29	11.56	20.14	1.99
	25.34	15.40	12.94	21.57	1.91
	0.28	0.19	0.20	0.41	0.06
	49.58	0.00	11.58	26.78	5.13
	0.62	0.00	0.15	0.39	0.10
	26.77	16.52	14.20	24.42	2.31
	26.61	16.41	14.08	24.16	2.27
	44.14	27.16	23.43	40.41	3.89
	47.78	29.49	25.36	43.61	4.13
	--	--	--	--	--
	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	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	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

6	7	8	9	10	11
Xylenes (mixed isomers)	Isopropyl benzene (Cumene)	Methyl-tert-butyl ether (MTBE)	1,2,4-Trimethylbenzene	Cyclohexane	Gasoline (RVP 13)
01330-20-7	00098-82-8	01634-04-4	00095-63-6	00110-82-7	
146.84	**8.73**	**0.00**	**52.29**	**0.00**	**0.00**
8.79	0.92	0.00	3.71	0.00	0.00
2.79	0.06	0.00	0.40	0.00	0.00
8.29	0.87	0.00	3.50	0.00	0.00
8.77	0.92	0.00	3.70	0.00	0.00
8.97	0.94	0.00	3.79	0.00	0.00
0.28	0.04	0.00	0.27	0.00	0.00
8.82	0.93	0.00	3.72	0.00	0.00
0.24	0.04	0.00	0.34	0.00	0.00
9.86	0.25	0.00	3.13	0.00	0.00
9.28	0.23	0.00	2.64	0.00	0.00
0.29	0.01	0.00	0.11	0.00	0.00
18.00	1.89	0.00	7.60	0.00	0.00
0.39	0.06	0.00	0.43	0.00	0.00
11.37	0.28	0.00	3.44	0.00	0.00
11.17	0.28	0.00	3.37	0.00	0.00
19.23	0.49	0.00	5.97	0.00	0.00
20.31	0.51	0.00	6.16	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	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
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	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

12	13	14	15	16	17	18	19
Ethyl alcohol	Acetaldehyde	Methyl alcohol (Methanol)	Naphthalene	Styrene	Cresol (-m)	Biphenyl	Phenol
00064-17-5	00075-07-0	00067-56-1	00091-20-3	00100-42-5	00108-39-4	00092-52-4	108-95-2
352.67	**0.00**	**17.01**	**6.29**	**1.23**	**0.61**	**0.44**	**5.40**
0.00	0.00	0.00	0.35	0.00	0.06	0.02	0.62
0.00	0.00	1.15	0.04	0.03	0.00	0.01	0.02
0.00	0.00	0.00	0.33	0.00	0.06	0.02	0.59
0.00	0.00	0.00	0.35	0.00	0.06	0.02	0.62
0.00	0.00	0.00	0.35	0.00	0.06	0.02	0.64
0.00	0.00	0.00	0.15	0.00	0.04	0.06	0.24
0.00	0.00	0.00	0.35	0.00	0.06	0.02	0.63
0.00	0.00	0.00	0.24	0.00	0.07	0.10	0.37
0.00	0.00	1.76	0.41	0.15	0.00	0.00	0.00
0.00	0.00	2.06	0.33	0.13	0.00	0.00	0.00
352.67	0.00	0.02	0.02	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.71	0.00	0.12	0.05	1.28
0.00	0.00	0.00	0.27	0.00	0.08	0.11	0.41
0.00	0.00	2.23	0.44	0.17	0.00	0.00	0.00
0.00	0.00	2.21	0.43	0.16	0.00	0.00	0.00
0.00	0.00	3.61	0.77	0.28	0.00	0.00	0.00
0.00	0.00	3.97	0.78	0.30	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	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	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	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	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

Source	PTE of NO_X (tpy)	PTE of VOC (tpy)	PTE of CO (tpy)
Tank Losses	---	23.07	---
Fugitive Fittings	---	1.11	---
Loading Rack Fugitives	---	8.21	---
Truck Rack VCU	3.23	15.85	1.81
TOTAL	3.23	48.24	1.81
Permit Limit	--	49.8	--
Tier I Threshold	100	100	100
Tier I Permit Required?	NO	NO	NO
Loading Rack + VCU Potential to Emit	3.23	24.06	1.81
PSD Major Source Threshold	250	250	250
PSD Permit Required?	NO	NO	NO

PTE of Total HAP (tpy)
1.30
0.21
0.11
0.21
1.82
--
25
NO
0.32
--
--

Table C-1a. Summary of Facility-wide Potential to Emit

Source	Emissions (tpy)			
	NO_x	VOC	CO	GHG
Tank Emissions [a]	---	23.07	---	---
Fugitive Fittings [b]	---	1.11	---	---
Truck Rack Fugitive Emissions [c]	---	8.21	---	---
Truck Rack VCU Stack Emissions [c]	3.23	15.85	1.81	1,225.22
TOTAL	**3.23**	**48.24**	**1.81**	**1,225.22**
TOTAL TRUCK RACK FUGITIVE AND VCU STACK EMISSIONS	**3.23**	**24.06**	**1.81**	**1,225.22**
PSD Major Source Threshold	**250**	**250**	**250**	**--**
PSD Applicable?	**NO**	**NO**	**NO**	**--**

[a] Tank throughputs are shown in Tables C-2a through C-2e. Speciation profiles used in AP-42 Chapter 7.1 methods are shown in Tables C-3b, C-4b, C-8a, and C-8d. Emission estimates from AP-42 Chapter 7.1 methods are presented in Table C-5.

[b] Emissions from fugitive equipment leaks are calculated in Table C-6.

[c] Emissions from the loading rack and VCU are calculated in Table C-7 and Table C-11.

Table C-1b. Post-Project Facilitywide PTE by Pollutant

Pollutant	CAS No.	Tanks [a] (tpy)	Product Loading Rack [b] (tpy)	VCU Stack [c] (tpy)	Gas-Fired Space Heater [d] (tpy)	Equipment Leak Fugitives [e] (tpy)	TOTAL FACILITY EMISSIONS	TOTAL FOR LOADING RACK, VCU, AND HEATERS	MAXIMUM HAP (tpy)
1,2,4-Trimethylbenzene	95-63-6	8.64E-02	5.53E-04	1.31E-03	0.0E+00	1.07E-02	0.10	0.00	Not a HAP
2,2,4-Trimethylpentane	540-84-1	1.34E-01	1.59E-02	3.10E-02	0.0E+00	1.95E-02	0.20	0.05	--
Benzene	71-43-2	1.24E-01	2.06E-02	3.98E-02	9.5E-07	2.80E-03	0.19	0.06	--
Biphenyl	92-52-4	6.05E-02	5.86E-10	3.65E-09	0.0E+00	1.13E-07	0.06	0.00	--
Cresols	1319-77-3	6.06E-02	7.19E-07	4.47E-06	0.0E+00	1.38E-04	0.06	0.00	--
Ethylbenzene	100-41-4	7.78E-02	1.28E-03	2.65E-03	0.0E+00	7.90E-03	0.09	0.00	--
Hexane (-n)	110-54-3	2.49E-01	3.63E-02	8.39E-02	8.1E-04	8.71E-02	0.46	0.12	YES
Isopropyl benzene (cumene)	98-82-8	6.46E-02	1.01E-04	2.56E-04	0.0E+00	2.79E-03	0.07	0.00	--
Methyl alcohol	67-56-1	6.88E-02	2.68E-03	5.16E-03	0.0E+00	3.62E-04	0.08	0.01	--
Naphthalene	91-20-3	6.34E-02	1.74E-05	6.52E-05	2.8E-07	1.24E-03	0.06	0.00	--
Phenol	108-95-2	0.00E+00	7.45E-06	4.63E-05	0.0E+00	1.43E-03	0.00	0.00	--
Styrene	100-42-5	6.09E-02	6.91E-05	1.33E-04	0.0E+00	9.36E-06	0.06	0.00	--
Toluene	108-88-3	1.99E-01	2.28E-02	4.50E-02	1.5E-06	4.37E-02	0.31	0.07	--
Xylenes	1330-20-7	1.34E-01	8.14E-03	1.66E-02	0.0E+00	3.99E-02	0.20	0.02	--
Additional HAP (tpy) [g] from Natural Gas Combustion									
2-Methylnaphthalene	91-57-6	--	--	1.58E-07	1.1E-08	--	1.68E-07	0.00	--
3-Methylchloranthrene	56-49-5	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
7,12-Dimethylbenz(a)anthracen	57-97-6	--	--	1.05E-07	7.2E-09	--	1.12E-07	0.00	--
Acenaphthene	83-32-9	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Acenaphthylene	203-96-8	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Anthracene	120-12-7	--	--	1.58E-08	1.1E-09	--	1.68E-08	0.00	--
Benz(a)anthracene	56-55-3	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Benzo(a)pyrene	50-32-8	--	--	7.88E-09	5.4E-10	--	8.42E-09	0.00	--
Benzo(b)fluoranthene	205-99-2	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Benzo(g,h,i)perylene	191-24-2	--	--	7.88E-09	5.4E-10	--	8.42E-09	0.00	--
Benzo(k)fluoranthene	205-82-3	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Chrysene	218-01-9	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Dibenzo(a,h)anthracene	53-70-3	--	--	7.88E-09	5.4E-10	--	8.42E-09	0.00	--
Dichlorobenzene	25321-22-6	--	--	7.88E-06	5.4E-07	--	8.42E-06	0.00	--
Fluoranthene	206-44-0	--	--	1.97E-08	1.4E-09	--	2.11E-08	0.00	--
Fluorene	86-73-7	--	--	1.84E-08	1.3E-09	--	1.97E-08	0.00	--
Formaldehyde	50-00-0	--	--	4.93E-04	3.4E-05	--	5.26E-04	0.00	--
Indeno(1,2,3-cd)pyrene	193-39-5	--	--	1.18E-08	8.1E-10	--	1.26E-08	0.00	--
Phenanathrene	85-01-8	--	--	1.12E-07	7.7E-09	--	1.19E-07	0.00	--
Pyrene	129-00-0	--	--	3.28E-08	2.3E-09	--	3.51E-08	0.00	--
Arsenic	7440-38-2	--	--	1.31E-06	9.0E-08	--	1.40E-06	0.00	--
Beryllium	7440-41-7	--	--	7.88E-08	5.4E-09	--	8.42E-08	0.00	--
Cadmium	7440-43-9	--	--	7.22E-06	5.0E-07	--	7.72E-06	0.00	--
Chromium	7440-47-3	--	--	9.19E-06	6.3E-07	--	9.83E-06	0.00	--
Cobalt	7440-48-4	--	--	5.52E-07	3.8E-08	--	5.90E-07	0.00	--
Manganese	7439-96-5	--	--	2.50E-06	1.7E-07	--	2.67E-06	0.00	--
Mercury	7439-97-6	--	--	1.71E-06	1.2E-07	--	1.82E-06	0.00	--
Nickel	7440-02-0	--	--	1.38E-05	9.5E-07	--	1.47E-05	0.00	--
Selenium	7782-49-2	--	--	1.58E-07	1.1E-08	--	1.68E-07	0.00	--
Total		**1.38**	**0.11**	**0.23**	**0.00**	**0.22**	**1.94**	**0.34**	--
Total HAP		**1.30**	**0.11**	**0.23**	**8.51E-04**	**0.21**	**1.84**	**0.33**	--
GHG (tpy CO_2e)		--	--	**1171.41**	**53.81**	**--**	**1,225.22**	**2,450.43**	--

[a] Tank emissions calculated using AP-42 Section 7.1; results calculated in Table C-5.

[b] Product loading rack fugitive VOC and speciated emissions presented in Table C-10a.

[c] VCU stack emissions are calculated in Tables C-10a (uncombusted vapor) and C-13 (combustion byproducts). Certain HAP emission factors for natural gas combustion at the VCU overlap with speciated HAP calculated from uncombusted fuel loading vapors. HAP emissions from both the uncombusted vapors and natural gas combustion are included for conservatism.

[d] Natural gas combustion emissions for the site's comfort heater are calculated in Table C-13.

[e] Equipment leak fugitive emissions are calculated in Table C-10a.

Table C-1c. Summary of Facility-wide Potential to Emit Hazardous Air Pollutants

Source	HAP Emissions (tpy)													
	2,2,4-Trimethyl pentane (Isooctane) 540-84-1	Benzene 71-43-2	Biphenyl 92-52-4	Cresol 1319-77-3	Ethyl benzene 100-41-4	Hexane (-n) 110-54-3	Isopropyl Benzene (Cumene) 98-82-8	Methanol 67-56-1	Naphthalene 91-20-3	Phenol 108-95-2	Styrene 100-42-5	Toluene 108-88-3	Xylenes 1330-20-7	TOTAL --
Tank Emissions [a]	0.13	0.12	0.06	0.06	0.08	0.25	0.06	0.07	0.06	0.00	0.06	0.20	0.13	1.30
Fugitive Fittings [b]	0.02	0.00	0.00	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.21
Truck Rack Loading Emissions [b]	0.02	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.11
Truck Rack VCU Stack Emissions [b]	0.03	0.04	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.04	0.02	0.21
TOTAL	**0.20**	**0.19**	**0.06**	**0.06**	**0.09**	**0.44**	**0.07**	**0.08**	**0.06**	**0.00**	**0.06**	**0.31**	**0.20**	**1.82**

[a] Tank throughputs are shown in Tables C-2a through C-2e. Speciation profiles used in AP-42 Chapter 7.1 methods are shown in Tables C-3a through C-3d and C-4b. Emission estimates from AP-42 Chapter 7.1 methods are presented in Table C-5.

[b] Speciated HAP emissions from fugitive equipment leaks, the loading rack, and the VCU stack are calculated in Table C-10a.

Table C-2a. Gasoline Potential Throughput

Tank #	Product	Safe Room Tank Level [a] (bbl)	Safe Room Tank Level [a] (gal)	% of Facility Throughput	Tank Throughput [b] (bbl)	Tank Throughput [b] (gal)	Tank Turnovers	Tank Type
914	Gasoline (Unleaded)	13,511	567,462	8.9%	789,014	33,138,591	58.40	IFR
915	Gasoline (Unleaded)	9,004	378,168	6.0%	525,815	22,084,218	58.40	IFR
919	Gasoline (Unleaded)	18,193	764,106	12.0%	1,062,433	44,622,188	58.40	IFR
920	Gasoline (Unleaded)	17,743	745,206	11.7%	1,036,154	43,518,468	58.40	IFR
921	Gasoline (Unleaded)	46,430	1,950,060	30.7%	2,711,415	113,879,415	58.40	IFR
922	Gasoline (Unleaded)	46,299	1,944,558	30.6%	2,703,765	113,558,110	58.40	IFR
	Totals	**151,180**	**6,349,560**	**100.0%**	**8,828,595**	**370,800,990**		

[a] Tank capacities and facility throughput limits are based on the values presented in the 2008 Tier II renewal permit application and permit.

Gasoline:	370,800,990	gal/yr
Diesel:	191,453,010	gal/yr
Transmix:	2,520,000	gal/yr

[b] Potential throughputs are represented by apportioning the total facility throughput of a given product among all tanks in the service of that product.

Table C-2b. Diesel Fuel Potential Throughput

Tank #	Product	Safe Room Tank Level (bbl)	Safe Room Tank Level [a] (gal)	% of Facility Throughput	Tank Throughput [b] (bbl)	Tank Throughput [b] (gal)	Tank Turnovers	Tank Type
901	Diesel Fuel	8,800	369,600	8.0%	362,625	15,230,259	41.21	Fixed
903	Diesel Fuel	9,066	380,772	8.2%	373,586	15,690,628	41.21	Fixed
905	Diesel Fuel	8,971	376,782	8.1%	369,672	15,526,211	41.21	Fixed
906	Diesel Fuel	9,028	379,176	8.2%	372,021	15,624,861	41.21	Fixed
907	Diesel Fuel	8,592	360,864	7.8%	354,054	14,870,271	41.21	IFR
908	Diesel Fuel	8,967	376,614	8.1%	369,507	15,519,288	41.21	Fixed
911	Diesel Fuel	18,974	796,908	17.2%	781,869	32,838,515	41.21	IFR
917	Diesel Fuel	19,007	798,294	17.2%	783,229	32,895,629	41.21	Fixed
918	Diesel Fuel	19,216	807,072	17.4%	791,842	33,257,348	41.21	IFR
	Totals	**110,621**	**4,646,082**	**100.0%**	**4,558,405**	**191,453,010**		

[a] Tank capacities and facility throughput limits are based on the values presented in the 2008 Tier II renewal permit application and permit.

Gasoline:	370,800,990	gal/yr
Diesel:	191,453,010	gal/yr
Transmix:	2,520,000	gal/yr

[b] Potential throughputs are represented by apportioning the total facility throughput of a given product among all tanks in the service of that product.

Table C-2c. Ethanol Potential Throughput

Tank #	Product	Safe Room Tank Level (bbl)	Safe Room Tank Level [a] (gal)	% of Facility Throughput	Tank Throughput [b] (bbl)	Tank Throughput [b] (gal)	Tank Turnovers	Tank Type
916	Ethanol	15,941	669,522	100.0%	980,955	41,200,110	61.54	IFR
	Totals	**15,941**	**669,522**	**100.0%**	**980,955**	**41,200,110**		

[a] Tank capacities and facility throughput limits are based on the values presented in the 2008 Tier II renewal permit application and permit.

[b] Ethanol assumed to be blended at 10% (E-10 gasoline) by volume. Condition 3.4 of the facility's current Tier II permit requires monitoring of the facility's gasoline throughput. If gasoline is moved through tanks and counted against the volumetric limit in pure form, then the maximum amount of ethanol needed to blend E-10 gasoline is (Gasoline Throughput) * 10% / 90%.

Table C-2d. Transmix Potential Throughput

Tank #	Product	Safe Room Tank Level (bbl)	Safe Room Tank Level [a] (gal)	% of Facility Throughput	Tank Throughput [b] (bbl)	Tank Throughput [b] (gal)	Tank Turnovers	Tank Type
902	Trans Mix	7,722	324,324	100.0%	60,000	2,520,000	7.77	IFR
	Totals	**7,722**	**324,324**	**100.0%**	**60,000**	**2,520,000**		

[a] Tank capacities and facility throughput limits are based on the values presented in the 2008 Tier II renewal permit application and permit.

Gasoline:	370,800,990	gal/yr
Diesel:	191,453,010	gal/yr
Transmix:	2,520,000	gal/yr

[b] Potential throughputs are represented by apportioning the total facility throughput of a given product among all tanks in the service of that product. Tank 930 is out of service.

Table C-2e. Additive Potential Throughput by Tank

Tank #	Additive	Safe Room Tank Level [a] (gal)	Tank Throughput [a] (gal)	Tank Turnovers	Tank Type
A100	OGA 72040	21,000	9,000	0.43	Vertical Fixed
A101	Nemo 1124E	6,000	4,000	0.67	Horizontal Tank
A102	Innospec RT-2W/80	4,000	10,000	2.50	Horizontal Tank
A105	Keropur AP-205-20	2,000	9,000	4.50	Horizontal Tank
A108	HiTec 6590	7,500	12,000	1.60	Horizontal Tank
A110	HiTech 6610	4,000	6,000	1.50	Horizontal Tank
A112	OLI-9103.x	6,500	11,000	1.69	Horizontal Tank
A113	OLI-9103.x	7,800	11,000	1.41	Horizontal Tank
A114	Unisol Red Dye - BK 50	1,600	4,000	2.50	Horizontal Tank
Total Additive Throughput			76,000		

[a] Tank capacities and facility throughput limits are based on the values presented in the 2008 Tier II renewal permit application and permit.

Table C-3a. Gasoline and Diesel Fuel Liquid Speciation

Refinery Unit	Refinery Stream	Benzene 71-43-2 (wt%)	Biphenyl 92-52-4 (wt%)	Cresol 1319-77-3 (wt%)	Isopropyl Benzene (Cumene) 98-82-8 (wt%)	Ethyl benzene 100-41-4 (wt%)	Methanol 67-56-1 (wt%)	Hexane (-n) 110-54-3 (wt%)	Naphthalene 91-20-3 (wt%)	Phenol 108-95-2 (wt%)	Styrene 100-42-5 (wt%)	1,2,4-Trimethyl benzene 95-63-6 (wt%)	2,2,4-Trimethyl pentane (Isooctane) 540-84-1 (wt%)	Toluene 108-88-3 (wt%)	Xylenes 1330-20-7 (wt%)
Distillate Blending	Diesel Fuel	ND	0.071	0.050	0.024	0.029	ND	0.016	0.170	0.260		0.225	0.012	0.050	0.122
Gasoline Blending	Conventional Gasoline	1.292		ND	0.150	0.926	0.143	1.338	0.303	ND	0.078	2.119	1.965	5.248	4.911

[a] The PERF speciation data provided non-detect results for propane and butane in distillate blending (diesel fuel), and 0.029 wt% propane and 2.932 wt% butane for gasoline blending (conventional gasoline). Neither propane nor butane are HAP.

Table C-3b. Pocatello Transmix Composition Data a

Products	Product Weight Percent	Benzene	Biphenyl	Cresol	Isopropyl Benzene (Cumene)	Ethyl benzene	Methanol	Hexane (-n)	Naphthalene	Phenol	Styrene	1,2,4-Trimethyl benzene	2,2,4-Trimethyl pentane (Isooctane)	Toluene	Xylenes
		Product Weight Percent X Chemical Weight Percent [b]													
Diesel	56%	ND	0.040	0.028	0.013	0.016	ND	0.009	0.095	0.145	0.000	0.126	0.007	0.028	0.068
Gasoline	44%	0.570	0.000	ND	0.066	0.408	0.063	0.590	0.134	ND	0.034	0.934	0.866	2.314	2.165
		Transmix Composition, Weight Percent [b]													
Totals	100%	0.570	0.040	0.028	0.080	0.425	0.063	0.599	0.229	0.145	0.034	1.060	0.873	2.342	2.234

[a] Transmix composition is taken to be a weighted average of the speciated compounds diesel and gasoline. 50 wt% of each compound is selected, as the transmix is created as pipeline interfaces of diesel and gasoline.

[b] Transmix composition is calculated, for any given species, by the following formula: Transmix wt% = (wt% in gasoline * product % gasoline by weight + wt% in diesel * product % diesel by weight).

Table C-3c. Pocatello Transmix Properties

Products	Product Volume Percent (Liquid)	Product Weight Percent (Liquid)	Product Mole Percent (Liquid)	Product Mole Percent (Vapor)	Liquid MW	Vapor MW	Temp [c] (°F)	Vapor Pressure [c] (psi)	Liquid Density [a] (lb/gal)
Diesel [a]	50%	56%	38.29%	0%	188	130	46.35	0.0039	7.1
Gasoline [a]	50%	44%	61.71%	100%	92	60	46.35	6.2	5.6
Total	100%	100%	100%						
Estimated Transmix Properties [b]					129	60		3.84	6.4

[a] Liquid and vapor molecular weights, vapor pressure, and liquid density for gasoline and diesel are taken from TANKS.

[b] Transmix properties are based on the weighted average of gasoline and diesel properties. Molar weights are weighted by mole percent in vapor and liquid phases. Vapor pressures are weighted based on liquid mole percents. Liquid densities are weighted based on liquid mass percents.

[c] Temp based on daily average ambient temperature for Pocatello, ID in MET data lookup tables provided with EPA's TANKS 4.0.9d software.

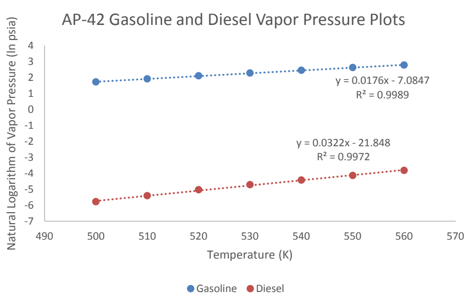


Table C-3d. Vapor Pressure Data

Temperature[a,c] (°F)	Temperature[a,c] (°R)	Temperature[a,c] (°C)	Gasoline [a] (RVP 15, psi)	Diesel [b] (psi)	Transmix [d,e] (psi)
40	500	4.63	5.5802	0.0031	3.44
50	510	10.18	6.774	0.0045	4.18
60	520	15.74	8.1621	0.0065	5.04
70	530	21.29	9.7656	0.009	6.03
80	540	26.85	11.6067	0.012	7.17
90	550	32.41	13.7085	0.016	8.47
100	560	37.96	16.0948	0.022	9.94
46.35	506.35	8.16	6.22	0.0039	3.84
70.55	530.55	21.60	9.52	0.0085	5.88

[a] Data on temperature and vapor pressures obtained from AP-42, Table 7.1-2.

[b] As shown in the chart at left, a line is fit to each data set from AP-42. The curve relates vapor pressure to temperature by the following equation:

$P = A e^{BT}$,

where A and B are constants. The equations represented in the chart are of the rearranged form,

$\ln P = \ln A + (B T)$

where ln A is the y-intercept of the trend line, and B is the slope. The values are as follows:

	Gasoline	Diesel
ln A	-7.0847	-21.848
A	8.38E-04	3.25E-10
B	0.0176	0.0322

[c] Temperature point on the bottom row is the daily average ambient temperature for Pocatello, ID in MET data lookup tables provided with EPA's TANKS 4.0.9d software.

[d] Transmix is assumed to be an ideal mixture of gasoline and diesel. Its vapor pressure is treated as the sum of the partial vapor pressures of each species.

[e] Using Antoine's Equation, the following vapor pressure coefficients can be derived from the available vapor pressure and temperature information for transmix:

A	7.066
B	1,522
C	311.5

Antoine coefficients are with reference to the units, P=mmHg, T=°C, used in the equation,
P = (10^(A - (B/(T + C)))), consistent with TANKS 4.0.9d.

Table C-4a. Mass Fraction of Gasoline in Denatured Ethanol

Product	Volume [a] (vol%)	Volume [b] (100-gal basis)	Density [c] (lb/gal)	Mass [c] (lb/100 gal)	Mass Fraction
Ethanol	96.64	96.64	6.61	638.79	0.9714
Gasoline	3.36	3.36	5.6	18.82	0.0286
Total	100	100		657.61	1.00

[a] Gasoline content can range from 1.96 vol% to 4.76 vol%. Average gasoline volume is 3.36 vol%. Ethanol content in vol% is 100 vol% less the gasoline content.

[b] Volume presented is for 100 gal of denatured ethanol.

[c] Densities from EPA's TANKS 4.0.9d software. Mass is the mass of each product in 100 gal of denatured ethanol, calculated as the product of density and volume.

[d] Mass fraction is the ratio of product mass to total mass.

Table C-4b. Composition of Denatured Ethanol

Species	CAS No.	Gasoline Speciation (wt%)	Denatured Ethanol Speciation (wt%)
Benzene	**71-43-2**	1.292	0.037
Isopropyl Benzene (Cumene)	**98-82-8**	0.150	0.004
Ethyl benzene	**100-41-4**	0.926	0.026
Methanol	**67-56-1**	0.143	0.004
Hexane (-n)	**110-54-3**	1.338	0.038
Naphthalene	**91-20-3**	0.303	0.009
Styrene	**100-42-5**	0.078	0.002
1,2,4-Trimethylbenzene	**95-63-6**	2.119	0.061
2,2,4-Trimethylpentane (Isooctane)	**540-84-1**	1.965	0.056
Toluene	**108-88-3**	5.248	0.150
Xylenes	**1330-20-7**	4.911	0.141
Other VOC		81.527	2.333
Ethanol	**64-17-5**		97.139
		TOTAL	100.000

[a] Gasoline speciation based on data from PERF refinery gasoline blending.

[b] Speciation calculated as the product of the wt% of a species in gasoline and the wt% of gasoline in the mixture. Ethanol content is the product of the wt% of ethanol in denatured ethanol above. Other VOC represent the difference between the partial speciation and 100 wt%.

Table C-5. Tank Emission Calculation Results [a,b]

Tank No.	Roof Type	Tank Service	Volume (gal)	Throughput (gal/yr)	Turnovers (per yr)	1,2,4-Trimethyl benzene 95-63-6 NO	1,3,5-Triethyl benzene 102-25-0 NO	2,2,4-Trimethyl pentane (Isooctane) 540-84-1 YES	2-Ethylhexyl nitrate 27247-96-7 NO	Benzene 71-43-2 YES	Biphenyl 92-52-4 YES	C. I. Solvent Red 164 92257-31-3 NO	Cresol 1319-77-3 YES	Ethanol 64-17-5 NO	Ethyl benzene 100-41-4 YES	Hexane (-n) 110-54-3 YES	Isopropyl Benzene (Cumene) 98-82-8 YES	Methanol 67-56-1 YES	Naphthalene 91-20-3 YES	Phenol 108-95-2 YES	Styrene 100-42-5 YES	Toluene 108-88-3 YES	Xylenes 1330-20-7 YES	Unidentified Components --	Grand Total
901	Vertical Fixed Roof Tank	Diesel Fuel	369,600	15,230,259	41.21	1.86E-03	--	2.83E-03	--	0.00E+00	1.21E-05	--	2.96E-05	0.00E+00	1.25E-03	1.21E-02	4.62E-04	0.00E+00	1.73E-04	--	0.00E+00	6.54E-03	4.39E-03	0.1552	0.18
902	Internal Floating Roof Tank	Transmix	324,324	2,520,000	7.77	1.99E-04	--	3.34E-03	--	4.26E-03	2.56E-06	--	1.97E-06	0.00E+00	3.13E-04	7.36E-03	2.86E-05	5.74E-04	1.77E-05	--	1.75E-05	5.00E-03	1.39E-03	1.9701	1.99
903	Vertical Fixed Roof Tank	Diesel Fuel	380,772	15,690,628	41.21	1.75E-03	--	2.66E-03	--	0.00E+00	1.14E-05	--	2.80E-05	0.00E+00	1.18E-03	1.14E-02	4.36E-04	0.00E+00	1.63E-04	--	0.00E+00	6.16E-03	4.14E-03	0.1463	0.17
905	Vertical Fixed Roof Tank	Diesel Fuel	376,782	15,526,211	41.21	1.85E-03	--	2.82E-03	--	0.00E+00	1.21E-05	--	2.96E-05	0.00E+00	1.25E-03	1.21E-02	4.61E-04	0.00E+00	1.73E-04	--	0.00E+00	6.52E-03	4.38E-03	0.1549	0.18
906	Vertical Fixed Roof Tank	Diesel Fuel	379,176	15,624,861	41.21	1.89E-03	--	2.89E-03	--	0.00E+00	1.23E-05	--	3.03E-05	0.00E+00	1.28E-03	1.24E-02	4.72E-04	0.00E+00	1.77E-04	--	0.00E+00	6.67E-03	4.49E-03	0.1585	0.19
907	Internal Floating Roof Tank	Diesel Fuel	360,864	14,870,271	41.21	1.34E-04	--	6.46E-05	--	0.00E+00	3.08E-05	--	2.21E-05	0.00E+00	3.80E-05	2.65E-04	1.96E-05	0.00E+00	7.65E-05	--	0.00E+00	1.57E-04	1.42E-04	0.0460	0.05
908	Vertical Fixed Roof Tank	Diesel Fuel	376,614	15,519,288	41.21	1.86E-03	--	2.84E-03	--	0.00E+00	1.21E-05	--	2.98E-05	0.00E+00	1.26E-03	1.21E-02	4.64E-04	0.00E+00	1.74E-04	--	0.00E+00	6.56E-03	4.41E-03	0.1557	0.19
911	Internal Floating Roof Tank	Diesel Fuel	796,908	32,838,515	41.21	1.71E-04	--	3.18E-05	--	0.00E+00	4.94E-05	--	3.50E-05	0.00E+00	3.04E-05	1.12E-04	2.05E-05	0.00E+00	1.20E-04	--	0.00E+00	8.87E-05	1.21E-04	0.0702	0.07
914	Internal Floating Roof Tank	Gasoline (Premium)	567,462	33,138,591	58.40	1.56E-03	--	5.78E-03	--	6.64E-03	0.00E+00	--	0.00E+00	0.00E+00	9.93E-04	1.08E-02	1.26E-04	8.81E-04	2.03E-04	--	7.28E-05	1.01E-02	4.93E-03	2.1387	2.18
915	Internal Floating Roof Tank	Gasoline (Premium)	378,168	22,084,218	58.40	1.32E-03	--	6.47E-03	--	7.70E-03	0.00E+00	--	0.00E+00	0.00E+00	9.53E-04	1.27E-02	1.13E-04	1.03E-03	1.64E-04	--	6.71E-05	1.08E-02	4.64E-03	2.5697	2.62
916	Internal Floating Roof Tank	Ethanol	669,522	41,200,110	61.54	5.54E-05	--	9.80E-05	--	9.53E-05	0.00E+00	--	0.00E+00	1.76E-01	2.75E-05	1.41E-04	4.10E-06	1.21E-05	7.73E-06	--	2.17E-06	2.03E-04	1.43E-04	0.0044	0.18
917	Vertical Fixed Roof Tank	Diesel Fuel	798,294	32,895,629	41.21	3.80E-03	--	5.79E-03	--	0.00E+00	2.48E-05	--	6.07E-05	0.00E+00	2.57E-03	2.48E-02	9.47E-04	0.00E+00	3.55E-04	--	0.00E+00	1.34E-02	9.00E-03	0.3180	0.38
918	Internal Floating Roof Tank	Diesel Fuel	807,072	33,257,348	41.21	2.15E-04	--	7.72E-05	--	0.00E+00	5.48E-05	--	3.90E-05	0.00E+00	5.15E-05	3.08E-04	2.90E-05	0.00E+00	1.34E-04	--	0.00E+00	1.94E-04	1.96E-04	0.0799	0.08
919	Internal Floating Roof Tank	Gasoline (Unleaded)	764,106	44,622,188	58.40	1.72E-03	--	7.10E-03	--	8.26E-03	0.00E+00	--	0.00E+00	0.00E+00	1.15E-03	1.34E-02	1.42E-04	1.11E-03	2.19E-04	--	8.31E-05	1.22E-02	5.68E-03	2.6083	2.66
920	Internal Floating Roof Tank	Gasoline (Unleaded)	745,206	43,518,468	58.40	1.68E-03	--	7.04E-03	--	8.20E-03	0.00E+00	--	0.00E+00	0.00E+00	1.14E-03	1.33E-02	1.40E-04	1.11E-03	2.14E-04	--	8.16E-05	1.21E-02	5.59E-03	2.5957	2.65
921	Internal Floating Roof Tank	Gasoline (Unleaded)	1,950,060	113,879,415	58.40	2.99E-03	--	1.17E-02	--	1.36E-02	0.00E+00	--	0.00E+00	0.00E+00	1.94E-03	2.21E-02	2.44E-04	1.80E-03	3.84E-04	--	1.41E-04	2.02E-02	9.61E-03	4.4117	4.50
922	Internal Floating Roof Tank	Gasoline (Unleaded)	1,944,558	113,558,110	58.40	3.08E-03	--	1.27E-02	--	1.47E-02	0.00E+00	--	0.00E+00	0.00E+00	2.06E-03	2.39E-02	2.55E-04	1.99E-03	3.91E-04	--	1.49E-04	2.18E-02	1.02E-02	4.6551	4.75
A100	Vertical Fixed Roof Tank	Additive: OGA 72040	21,000	9,000	0.43	1.90E-02	--	1.90E-02	--	1.90E-02	1.90E-02	--	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	1.90E-02	--	1.90E-02	1.90E-02	1.90E-02	0.0190	0.0190
A101	Horizontal Tank	Additive: Nemo 1124E	6,000	4,000	0.67	5.60E-03	--	5.60E-03	--	5.60E-03	5.60E-03	--	5.60E-03	5.60E-03	5.60E-03	5.60E-03	5.60E-03	5.60E-03	5.60E-03	--	5.60E-03	5.60E-03	5.60E-03	0.0056	0.0056
A102	Horizontal Tank	Additive: Innospec RT-2W/80	4,000	10,000	2.50	4.41E-03	--	4.41E-03	--	4.41E-03	4.41E-03	--	4.41E-03	4.41E-03	4.41E-03	4.41E-03	4.41E-03	4.41E-03	4.41E-03	--	4.41E-03	4.41E-03	4.41E-03	0.0044	0.0044
A105	Horizontal Tank	Additive: Keropur AP-205-20	2,000	9,000	4.50	2.54E-03	--	2.54E-03	--	2.54E-03	2.54E-03	--	2.54E-03	2.54E-03	2.54E-03	2.54E-03	2.54E-03	2.54E-03	2.54E-03	--	2.54E-03	2.54E-03	2.54E-03	0.0025	0.0025
A108	Horizontal Tank	Additive: HiTec 6590	7,500	12,000	1.60	8.93E-03	--	8.93E-03	--	8.93E-03	8.93E-03	--	8.93E-03	8.93E-03	8.93E-03	8.93E-03	8.93E-03	8.93E-03	8.93E-03	--	8.93E-03	8.93E-03	8.93E-03	0.0089	0.0089
A110	Horizontal Tank	Additive: HiTech 6610	4,000	6,000	1.50	3.99E-03	--	3.99E-03	--	3.99E-03	3.99E-03	--	3.99E-03	3.99E-03	3.99E-03	3.99E-03	3.99E-03	3.99E-03	3.99E-03	--	3.99E-03	3.99E-03	3.99E-03	0.0040	0.0040
A112	Horizontal Tank	Additive: OLI-9103.x	6,500	11,000	1.69	6.17E-03	--	6.17E-03	--	6.17E-03	6.17E-03	--	6.17E-03	6.17E-03	6.17E-03	6.17E-03	6.17E-03	6.17E-03	6.17E-03	--	6.17E-03	6.17E-03	6.17E-03	0.0062	0.0062
A113	Horizontal Tank	Additive: OLI-9103.x	7,800	11,000	1.41	7.32E-03	--	7.32E-03	--	7.32E-03	7.32E-03	--	7.32E-03	7.32E-03	7.32E-03	7.32E-03	7.32E-03	7.32E-03	7.32E-03	--	7.32E-03	7.32E-03	7.32E-03	0.0073	0.0073
A114	Horizontal Tank	Additive: Unisol Red Dye - BK 50	1,600	4,000	2.50	2.32E-03	--	2.32E-03	--	2.32E-03	2.32E-03	--	2.32E-03	2.32E-03	2.32E-03	2.32E-03	2.32E-03	2.32E-03	2.32E-03	--	2.32E-03	2.32E-03	2.32E-03	0.0023	0.0023
			TOTAL Tank Emissions:			0.09	0.00	0.13	0.00	0.12	0.06	0.00	0.06	0.24	0.08	0.25	0.06	0.07	0.06	0.00	0.06	0.20	0.13	22.30	23.07

[a] All emission rates are reported in tpy, based on AP-42 Chapter 7.1 calculations.

[b] Tank HAP emissions from the additive tanks are conservatively set equal to total VOC emissions. This approach is appropriate because, even on this assumption, the additive tanks do not contribute substantially to the facility's total HAP or speciated HAP emissions.

Table C-6. Fugitive Emissions from Equipment Leaks

Source	Service	Number of Units	Emission Factor[a] (kg/hr/source)	Emission Factor[b] (lb/hr/source)	Emissions [c] (tons/yr)
Valves	Liquid	1,265	4.30E-05	9.48E-05	0.53
Valves	Vapor	33	1.30E-05	2.87E-05	0.00
Fittings	Liquid	1,265	8.00E-06	1.76E-05	0.10
Fittings	Vapor	110	4.20E-05	9.26E-05	0.04
Pump Seals	Liquid	61	5.40E-04	1.19E-03	0.32
Others	Liquid	98	1.30E-04	2.87E-04	0.12
				TOTAL	**1.11**

[a] Emission factors are from Table 2-3 (Marketing Terminal Average Emission Factors) in the "Protocol for Equipment Leak Emission Estimates", EPA-453/R-95-017, November 1995.

[b] Conversion factor used: EF (lb/hr/source) = 2.205 * EF (kg/hr/source)

[c] Emissions, Tons/yr = (# of units)(emission factor, lb/hr)(24 hr/day)(365 day/yr)/(2,000lb/ton)

Table C-7a. Loading Rack and VCU - Annual Emissions of VOC

Product	Quantity Loaded (Mgal/yr)	VOC Emission Factor (mg/L)	(lb/Mgal)	VOC Emissions (tpy)
Gasoline [a,b,c]	370,801	10	0.08	15.47
Diesel [a]	191,453		3.72E-04	0.04
Transmix [a,d]	2,520		0.27	0.34
			Total Stack Emissions:	**15.85**
Fugitive Vapor Leakage from Gasoline [e]	370,801		0.04	8.17
Fugitive Vapor Leakage from Diesel [e]	191,453		0.00	0.01
Fugitive Vapor Leakage from Transmix [e]	2,520		0.03	0.03
			Total Fugitive Emissions:	**8.21**

[a] Loading emission factors for diesel fuel and transmix are calculated using Equation 1 in AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids, dated July 2008. Equation 1 is L = 12.46*S*P*M/T*(1-eff/100). Vapors are captured at an estimated rate of 99.2%.

S =	0.60	Saturation factor for tank trucks, submerged loading, dedicated normal service. AP-42 Table 5.2-1, 6/08.
$P_{Distillate\ \#\ 2}$ =	0.0039	(psia) True vapor pressure linearly interpolated based on data for Distillate Fuel Oil No. 2 provided in AP-42, Section 7, Table 7.1-2, dated November 2006. See Table C-3d for calculations.
$M_{Distillate\ \#\ 2}$ =	130	(lb/lbmol) Molecular weight of Distillate Fuel Oil No. 2 vapor at 60 F (AP-42, Section 7, Table 7.1-2, dated November 2006)
$P_{Gasoline\ RVP15}$ =	6.22	(psia) True vapor pressure interpolated based on data for Gasoline RVP 15 provided in AP-42, Section 7, Table 7.1-2, dated November 2006. See Table C-3d for calculations.
$M_{Gasoline\ RVP15}$ =	60	(lb/lbmol) Molecular weight of Gasoline RVP 15 vapor at 60 F (AP-42, Section 7, Table 7.1-2, dated November 2006)
$P_{Transmix}$ =	3.84	(psia) True vapor pressure interpolated based on data for Gasoline RVP 15 and diesel fuel provided in AP-42, Section 7, Table 7.1-2, dated November 2006. See Table C-3d for calculations.
$M_{Transmix}$ =	60	(lb/lbmol) Molecular weight of transmix vapor at 60 F. See Table C-3c for calculations.
T =	506	(°R) Daily Average Ambient Temperature for Pocatello, ID, from EPA's TANKS 4.0.9d meteorology data tables.
Control Eff.=	95%	Assumed average control efficiency for VCU per AP-42, Section 5.2, page 5.2-6 (range provided between 90-99%). Efficiency is used for diesel fuel and transmix.

This equation is also used to calculate uncontrolled loading emission factor for gasoline loading, for the purpose of calculating fugitive losses from gasoline loading, as shown in footnote 'e.'

[b] Permit T2-2008.0026, Condition 3.8, stipulates that TOC emissions from the VCU shall not exceed 10 milligrams per liter of liquid throughput into gasoline tank trucks, per 40 CFR 63.422(b). Diesel fuel and transmix do not meet the definition of gasoline, so the AP-42 loading equation in footnote 'a' is used for these liquids.

[c] Denatured ethanol and fuel additives are added to gasoline prior to loading into the tanker trucks. The quantity loaded includes denatured ethanol, additive, and gasoline. The gasoline mixture (gasoline blended with ethanol and/or additive) meets the definition of gasoline provided in 40 CFR 60.501.

[d] Transmix properties are calculated in Tables C-3c and C-3d.

[e] Per AP-42, Chapter 5, section 5.2.2.1.1 page 5.2-6, not all of the displaced vapors reach the control device because of leakage from both the tank truck and collection system. In order to capture these fugitive emissions, the uncontrolled emission factors provided in AP-42, Table 5.2-5 for loading operations are used in conjunction with a 99.2% collection efficiency for tank trucks that meet the MACT-level annual leak test. Therefore, the emission factor associated to the leakage (EF_{Leak}) can be calculated as follows: EF_{Leak}= (1-Collection Eff./100)*$EF_{Uncontrolled}$

$EF_{Uncontrolled}$=	5.51	(lb/Mgal) Uncontrolled Organic Emission Factor for Gasoline, submerged loading.
$EF_{Uncontrolled}$=	0.008	(lb/Mgal) Uncontrolled Organic Emission Factor for Distillate Oil No.2 for Tank-Trucks
$EF_{Uncontrolled}$=	3.40	(lb/Mgal) Uncontrolled Organic Emission Factor for Transmix
Control Eff.	99.2%	

Table C-7b. Truck Loading Rack and VCU - Short-Term Emissions Using MMBtu/hr Threshold

Variable		Value	Units of Measure		
Flow of VOC Vapors from Rack [a]		13,134,963	scf/yr at	46.68	°F
Molar Gas Constant		0.73	atm ft^3 / lbmol °R		
Molar Flow of Hydrocarbon to VCU [b]		0.51	mol/s hydrocarbons as C_4H_{10}		
HHV as Butane [c]		2,877.60	kJ/mol HHV		
Maximum Heat Input Rate to VCU		43,961.85	MMBtu/yr HHV		
Emission Factors [d] (lb/MMBtu)		**Emissions (tpy)**			
PM	7.84E-03	0.17			
PM_{10}	7.84E-03	0.17			
$PM_{2.5}$	7.84E-03	0.17			
SO_2 [e]	8.16E-04	0.02			
NO_X	1.47E-01	3.23			
CO	8.24E-02	1.81			

[a] Based on the calculated uncontrolled vapor emissions of the maximum annual throughput of each product.

[b] Calculated as: (vapor flow, acf/min)*(vol% HC as propane, vol%)/(0.7302 atm ft^3 / lbmol °R)*(1 atm)/(0 °F + 459.67 F°)*(453.5924 g/lb)/(60 s/min)

[c] Per CRC Handbook of Chemistry and Physics, 86th Edition, p. 5-70.

[d] Emission factors from AP-42, Section 1.5, external combustion of butane vapors, Tables 1.5-1, converted to lb/MMBtu using the 102 x 10^6 BTU/10^3 gal basis on which the AP-42 factors are based.

[e] The emission factor in AP-42, Section 1.5 for SO_2 is (0.09)*(S) lb/10^3 gal fuel combusted, where S is the sulfur content of the fuel in gr/100 ft^3. A sulfur content of 0.59 gr / 100 scf is calculated, based on a very conservative assumption that 100% of sulfur in gasoline is vaporized.

Gasoline sulfur content:	80	ppmwt based on federal EPA Tier 2 cap for gasoline sulfur
Density of gasoline:	5.6	lb/gal
Vapors generated during loading:	5.51E-03	lb vapors / gal loaded
Gasoline vapor molar mass	60.00	lb / lbmol
Temperature	506.35	°R
Gasoline Vapor Mass	0.16	lb vapor / scf vapor
Gasoline Vapor Concentration of Sulfur	1.32E-02	lb S / scf vapor

Gasoline Vapor Concentration of Sulfur	0.92	gr S / 100 scf vapor

Table C-8a. Speciated Liquid Weight Percents a

Species CAS No. Product	1,2,4-Trimethyl benzene 95-63-6 (wt%)	2,2,4-Trimethyl pentane 540-84-1 (wt%)	Benzene 71-43-2 (wt%)	Biphenyl 92-52-4 (wt%)	Cresol 1319-77-3 (wt%)	Ethyl benzene 100-41-4 (wt%)	Hexane (-n) 110-54-3 (wt%)	Isopropyl benzene (cumene) 98-82-8 (wt%)	Methanol 67-56-1 (wt%)	Naphthalene 91-20-3 (wt%)
Gasoline [b]	2.119	1.965	1.292			0.926	1.338	0.15	0.143	0.303
Diesel [c]	0.225	0.012		0.071	0.05	0.029	0.016	0.024		0.17
Transmix [d]	1.060	0.873	0.570	0.040	0.028	0.425	0.599	0.080	0.063	0.229

[a] All speciation data are presented as wt%.

[b] Gasoline speciation is obtained from PERF speciation data for conventional gasoline.

[c] Diesel fuel speciation is obtained from PERF speciation data for diesel fuel.

[d] Transmix speciation is calculated as a weighted average of gasoline and diesel speciation as shown in Table C-3b.

Table C-8b. Speciated Liquid Weight Fractions a

Species CAS No. Product	1,2,4-Trimethyl benzene 95-63-6 (wt. frac.)	2,2,4-Trimethyl pentane 540-84-1 (wt. frac.)	Benzene 71-43-2 (wt. frac.)	Biphenyl 92-52-4 (wt. frac.)	Cresol 1319-77-3 (wt. frac.)	Ethyl benzene 100-41-4 (wt. frac.)	Hexane (-n) 110-54-3 (wt. frac.)	Isopropyl benzene (cumene) 98-82-8 (wt. frac.)	Methanol 67-56-1 (wt. frac.)	Naphthalene 91-20-3 (wt. frac.)
Gasoline	2.12E-02	1.97E-02	1.29E-02	0.00E+00	0.00E+00	9.26E-03	1.34E-02	1.50E-03	1.43E-03	3.03E-03
Diesel No. 2	2.25E-03	1.20E-04	0.00E+00	7.10E-04	5.00E-04	2.90E-04	1.60E-04	2.40E-04	0.00E+00	1.70E-03
Transmix	1.06E-02	8.73E-03	5.70E-03	3.97E-04	2.80E-04	4.25E-03	5.99E-03	7.96E-04	6.31E-04	2.29E-03

[a] All speciation data are presented as weight fractions.

[b] Gasoline speciation is obtained from PERF speciation data for conventional gasoline.

[c] Diesel fuel speciation is obtained from PERF speciation data for diesel fuel.

[d] Transmix speciation is calculated as a weighted average of gasoline and diesel speciation as shown in Table C-3b.

Table C-8c. Chemical Properties by Species a

Properties [a]	1,2,4-Trimethyl benzene 95-63-6	2,2,4-Trimethyl pentane 540-84-1	Benzene 71-43-2	Biphenyl 92-52-4	Cresol 1319-77-3	Ethyl benzene 100-41-4	Hexane (-n) 110-54-3	Isopropyl benzene (cumene) 98-82-8	Methanol 67-56-1	Naphthalene 91-20-3
Mi	120.19	114.23	78.11	154.21	108.14	106.17	86.18	120.19	32.04	128.17
A	7.04383	6.8118	6.905	--	7.508	6.975	6.876	6.93666	7.897	7.37
B	1573.267	1257.84	1211.033	--	1856.36	1424.255	1171.17	1460.793	1474.08	1938.36

C	208.56	220.74	220.79	--	199.07	213.21	224.41	207.78	229.13	222.61
Source [b]	TANKS	TANKS	AP-42	--	AP-42	AP-42	AP-42	AP-42	AP-42	AP-42

[a] Chemical properties are as follows: Mi = molar mass of species; A, B, C = Antoine equation constants for each species following the form, P (mm Hg) = 10^(A - (B/((T, °C)+ C))

[b] Antoine coefficients are obtained from two sources. Coefficients for species marked "TANKS" are based on EPA's database of Antoine coefficients provided with its TANKS 4.0.9d sof
Table 7.1-5. Biphenyl vapor pressure is estimated in Table C-8e from an empirical correlation, so no Antoine coefficients are provided.

Table C-8d. Vapor Speciation Calculations

Mixture Properties [a]				1,2,4-Trimethyl benzene 95-63-6	2,2,4-Trimethyl pentane 540-84-1	Benzene 71-43-2	Biphenyl [f] 92-52-4	Cresol 1319-77-3	Ethyl benzene 100-41-4	Hexane (-n) 110-54-3
				Vapor Weight Frac						
Gasoline [b]	ML	92	P	1.16E-02	3.97E-01	7.90E-01	3.87E-07	6.73E-04	6.64E-02	1.33E+00
	MV	60	Pi	1.88E-04	6.28E-03	1.20E-02	0.00E+00	0.00E+00	5.33E-04	1.89E-02
	PVA	6.22	xi	1.62E-02	1.58E-02	1.52E-02	0.00E+00	0.00E+00	8.02E-03	1.43E-02
	TLA	7.97	yi	3.03E-05	1.01E-03	1.93E-03	0.00E+00	0.00E+00	8.57E-05	3.05E-03
			Zi,V	6.06E-05	1.92E-03	2.52E-03	0.00E+00	0.00E+00	1.52E-04	4.38E-03
Diesel No. 2 [c]	ML	188	P	1.16E-02	3.97E-01	7.90E-01	3.87E-07	6.73E-04	6.64E-02	1.33E+00
	MV	130	Pi	4.08E-05	7.84E-05	0.00E+00	3.35E-10	5.85E-07	3.41E-05	4.63E-04
	PVA	0.00391	xi	3.52E-03	1.97E-04	0.00E+00	8.66E-04	8.69E-04	5.14E-04	3.49E-04
	TLA	7.97	yi	1.04E-02	2.00E-02	0.00E+00	8.55E-08	1.50E-04	8.71E-03	1.18E-01
			Zi,V	9.65E-03	1.76E-02	0.00E+00	1.01E-07	1.24E-04	7.12E-03	7.84E-02
Transmix [d]	ML	129	P	1.16E-02	3.97E-01	7.90E-01	3.87E-07	6.73E-04	6.64E-02	1.33E+00
	MV	60	Pi	1.32E-04	3.90E-03	7.42E-03	1.28E-10	2.24E-07	3.42E-04	1.19E-02
	PVA	3.84	xi	1.14E-02	9.84E-03	9.39E-03	3.31E-04	3.33E-04	5.15E-03	8.95E-03
	TLA	7.97	yi	3.43E-05	1.02E-03	1.93E-03	3.34E-11	5.84E-08	8.91E-05	3.09E-03
			Zi,V	6.87E-05	1.94E-03	2.52E-03	8.58E-11	1.05E-07	1.58E-04	4.44E-03

[a] Mixture property nomenclature:

Mi = molecular weight of component i, lb/lb-mole

ML = molecular weight of liquid stock, lb/lb-mole

MV = molecular weight of vapor stock, lb/lb-mole

P = vapor pressure of component i at liquid surface temperature, psia

Pi = partial pressure of component i, psia

PVA = total vapor pressure of liquid mixture, psia, values interpolated from AP-42 Table 7.1-2

TLA = average liquid surface temperature, degrees C. (for tanks in Pocatello, ID with specular aluminum exterior, per TANKS 4.0.9d)

xi = liquid mole fraction of component i, lb-mole/lb-mole

yi = vapor mole fraction of component i, lb-mole/lb-mole

Zi,L = weight fraction of component i in the liquid, lb/lb

Zi,V = weight fraction of component i in the vapor, lb/lb

[b] Gasoline liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the daily average ambient temperature at Pocatello, ID, listed in the MET data tables of TAI available in AP-42, Table 7.1-2.

[c] Distillate fuel oil liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the daily average ambient temperature at Pocatello, ID, listed in the MET data table pressure data available in AP-42, Table 7.1-2.

[d] Transmix liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the daily average ambient temperature at Pocatello, ID, listed in the MET data tables of TA vapor pressures, weighted by fractions of gasoline and diesel (on a molar basis).

[e] Vapor mole fractions (Zi,V) for each species in each product are calculated using the following method based on AP-42 Section 7.1:

xi = ((Zi,L)(ML))/Mi

P = (10^(A - (B/(TLA + C))))(0.0193368)

Pi = (P)(xi)

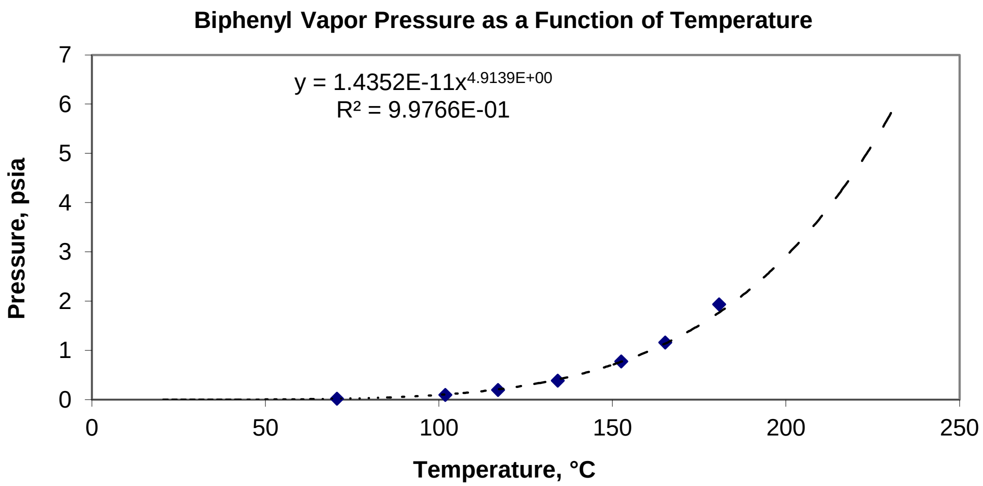
yi = Pi/PVA

Zi,V = ((yi)(Mi))/MV = (10^(A - (B/(TLA + C)))(0.0193368)(Zi.L)(ML)/PVA/MV)

[f] The vapor pressure of biphenyl species is not evaluated with an Antoine equation. Instead, biphenyl vapor pressure as a function of temperature is regressed from saturation curve

Table C-8e. Saturation Curve Data for Biphenyl

Temperature (°C)	Vapor Pressure (mmHg)	psia
70.6	1	0.02
101.8	5	0.10
117	10	0.19
134.2	20	0.39
152.5	40	0.77
165.2	60	1.16
180.7	100	1.93



[a] Biphenyl vapor pressure as a function of temperature is regressed from saturation curve data presented in Perry's Chemical Engineer's Handbook, 6th ed., Table 3-8. The regressed exponential function is
P = 1.4352 E-11 * T ^ (4.9139),
where T is in °C and P is in psia.

[b] Using Antoine's Equation, the following vapor pressure coefficients can be derived from the available vapor pressure and temperature information for biphenyl:

A	7.713
B	2,441
C	246.6

Antoine coefficients are with reference to the units, P=mmHg, T=°C, used in the equation,
P = (10^(A - (B/(T + C)))), consistent with TANKS 4.0.9d.

Phenol 108-95-2 (wt%)	Styrene 100-42-5 (wt%)	Toluene 108-88-3 (wt%)	Xylenes 1330-20-7 (wt%)	Total (wt%)
	0.078	5.248	4.911	18.473
0.26		0.05	0.122	1.029
0.145	0.034	2.342	2.234	8.721

Phenol 108-95-2 (wt. frac.)	Styrene 100-42-5 (wt. frac.)	Toluene 108-88-3 (wt. frac.)	Xylenes 1330-20-7 (wt. frac.)	Total (wt. frac.)
0.00E+00	7.80E-04	5.25E-02	4.91E-02	0.185
2.60E-03	0.00E+00	5.00E-04	1.22E-03	0.010
1.45E-03	3.44E-04	2.34E-02	2.23E-02	0.087

Phenol 108-95-2	Styrene 100-42-5	Toluene 108-88-3	Xylenes 1330-20-7
94.11	104.15	92.14	106.17
7.133	7.14	6.954	7.009
1516.79	1574.51	1344.8	1426.266

174.95	224.09	219.48	215.11
AP-42	AP-42	AP-42	AP-42

ftware. Coefficients for species marked "AP-42" are from AP-42

tion Calculations (Zi,V) [f]							
Isopropyl benzene (cumene) 98-82-8	**Methanol 67-56-1**	**Naphthalene 91-20-3**	**Phenol 108-95-2**	**Styrene 100-42-5**	**Toluene 108-88-3**	**Xylenes 1330-20-7**	**Total**
2.83E-02	9.25E-01	1.78E-03	1.34E-03	4.38E-02	2.13E-01	7.98E-02	
3.25E-05	3.80E-03	3.87E-06	0.00E+00	3.02E-05	1.11E-02	3.40E-03	
1.15E-03	4.11E-03	2.17E-03	0.00E+00	6.89E-04	5.24E-02	4.26E-02	
5.23E-06	6.11E-04	6.22E-07	0.00E+00	4.86E-06	1.79E-03	5.46E-04	
1.05E-05	3.26E-04	1.33E-06	0.00E+00	8.43E-06	2.75E-03	9.67E-04	0.013
2.83E-02	9.25E-01	1.78E-03	1.34E-03	4.38E-02	2.13E-01	7.98E-02	
1.06E-05	0.00E+00	4.43E-06	6.96E-06	0.00E+00	2.17E-04	1.72E-04	
3.75E-04	0.00E+00	2.49E-03	5.19E-03	0.00E+00	1.02E-03	2.16E-03	
2.72E-03	0.00E+00	1.13E-03	1.78E-03	0.00E+00	5.55E-02	4.41E-02	
2.51E-03	0.00E+00	1.12E-03	1.29E-03	0.00E+00	3.93E-02	3.60E-02	0.193
2.83E-02	9.25E-01	1.78E-03	1.34E-03	4.38E-02	2.13E-01	7.98E-02	
2.42E-05	2.34E-03	4.08E-06	2.67E-06	1.86E-05	6.96E-03	2.16E-03	
8.52E-04	2.53E-03	2.30E-03	1.99E-03	4.25E-04	3.27E-02	2.71E-02	
6.29E-06	6.11E-04	1.06E-06	6.95E-07	4.85E-06	1.81E-03	5.63E-04	
1.26E-05	3.26E-04	2.27E-06	1.09E-06	8.42E-06	2.79E-03	9.96E-04	0.013

NKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d by regression from vapor pressure data

s of TANKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d by regression from vapor

NKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d as an average of gasoline and diesel data presented in Perry's Chemical Engineer's Handbook, 6th ed., Table 3-8, shown in Table C-8e.

Table C-9a. Speciated Liquid Weight Percents a

Species CAS No. Product	1,2,4-Trimethyl benzene 95-63-6 (wt%)	2,2,4-Trimethyl pentane 540-84-1 (wt%)	Benzene 71-43-2 (wt%)	Biphenyl 92-52-4 (wt%)	Cresol 1319-77-3 (wt%)	Ethyl benzene 100-41-4 (wt%)	Hexane (-n) 110-54-3 (wt%)	Isopropyl benzene (cumene) 98-82-8 (wt%)	Methanol 67-56-1 (wt%)	Naphthalene 91-20-3 (wt%)
Gasoline [b]	2.119	1.965	1.292			0.926	1.338	0.15	0.143	0.303
Diesel [c]	0.225	0.012		0.071	0.05	0.029	0.016	0.024		0.17
Transmix [d]	1.060	0.873	0.570	0.040	0.028	0.425	0.599	0.080	0.063	0.229

[a] All speciation data are presented as wt%.

[b] Gasoline speciation is obtained from PERF speciation data for conventional gasoline.

[c] Diesel fuel speciation is obtained from PERF speciation data for diesel fuel.

[d] Transmix speciation is calculated as a weighted average of gasoline and diesel speciation as shown in Table C-3b.

Table C-9b. Speciated Liquid Weight Fractions a

Species CAS No. Product	1,2,4-Trimethyl benzene 95-63-6 (wt. frac.)	2,2,4-Trimethyl pentane 540-84-1 (wt. frac.)	Benzene 71-43-2 (wt. frac.)	Biphenyl 92-52-4 (wt. frac.)	Cresol 1319-77-3 (wt. frac.)	Ethyl benzene 100-41-4 (wt. frac.)	Hexane (-n) 110-54-3 (wt. frac.)	Isopropyl benzene (cumene) 98-82-8 (wt. frac.)	Methanol 67-56-1 (wt. frac.)	Naphthalene 91-20-3 (wt. frac.)
Gasoline	2.12E-02	1.97E-02	1.29E-02	0.00E+00	0.00E+00	9.26E-03	1.34E-02	1.50E-03	1.43E-03	3.03E-03
Diesel No. 2	2.25E-03	1.20E-04	0.00E+00	7.10E-04	5.00E-04	2.90E-04	1.60E-04	2.40E-04	0.00E+00	1.70E-03
Transmix	1.06E-02	8.73E-03	5.70E-03	3.97E-04	2.80E-04	4.25E-03	5.99E-03	7.96E-04	6.31E-04	2.29E-03

[a] All speciation data are presented as weight fractions.

[b] Gasoline speciation is obtained from PERF speciation data for conventional gasoline.

[c] Diesel fuel speciation is obtained from PERF speciation data for diesel fuel.

[d] Transmix speciation is calculated as a weighted average of gasoline and diesel speciation as shown in Table C-3b.

Table C-9c. Chemical Properties by Species a

Properties [a]	1,2,4-Trimethyl benzene 95-63-6	2,2,4-Trimethyl pentane 540-84-1	Benzene 71-43-2	Biphenyl 92-52-4	Cresol 1319-77-3	Ethyl benzene 100-41-4	Hexane (-n) 110-54-3	Isopropyl benzene (cumene) 98-82-8	Methanol 67-56-1	Naphthalene 91-20-3
Mi	120.19	114.23	78.11	154.21	108.14	106.17	86.18	120.19	32.04	128.17
A	7.04383	6.8118	6.905	--	7.508	6.975	6.876	6.93666	7.897	7.37
B	1573.267	1257.84	1211.033	--	1856.36	1424.255	1171.17	1460.793	1474.08	1938.36

C	208.56	220.74	220.79	--	199.07	213.21	224.41	207.78	229.13	222.61
Source [b]	TANKS	TANKS	AP-42	--	AP-42	AP-42	AP-42	AP-42	AP-42	AP-42

[a] Chemical properties are as follows: Mi = molar mass of species; A, B, C = Antoine equation constants for each species following the form, P (mm Hg) = 10^(A - (B/((T, °C)+ C))

[b] Antoine coefficients are obtained from two sources. Coefficients for species marked "TANKS" are based on EPA's database of Antoine coefficients provided with its TANKS 4.0.9d sof
Table 7.1-5. Biphenyl vapor pressure is estimated in Table C-8e from an empirical correlation, so no Antoine coefficients are provided.

Table C-9d. Vapor Speciation Calculations

Mixture Properties [a]				1,2,4-Trimethyl benzene 95-63-6	2,2,4-Trimethyl pentane 540-84-1	Benzene 71-43-2	Biphenyl [f] 92-52-4	Cresol 1319-77-3	Ethyl benzene 100-41-4	Hexane (-n) 110-54-3
				Vapor Weight Frac						
Gasoline [b]	ML	92	P	3.08E-02	8.01E-01	1.55E+00	4.97E-05	2.37E-03	1.55E-01	2.50E+00
	MV	60	Pi	5.00E-04	1.27E-02	2.36E-02	0.00E+00	0.00E+00	1.25E-03	3.57E-02
	PVA	9.52	xi	1.62E-02	1.58E-02	1.52E-02	0.00E+00	0.00E+00	8.02E-03	1.43E-02
	TLA	21.42	yi	5.26E-05	1.33E-03	2.48E-03	0.00E+00	0.00E+00	1.31E-04	3.75E-03
			Zi,V	1.05E-04	2.54E-03	3.23E-03	0.00E+00	0.00E+00	2.32E-04	5.39E-03
Diesel No. 2 [c]	ML	188	P	3.08E-02	8.01E-01	1.55E+00	4.97E-05	2.37E-03	1.55E-01	2.50E+00
	MV	130	Pi	1.09E-04	1.58E-04	0.00E+00	4.30E-08	2.06E-06	7.97E-05	8.73E-04
	PVA	0.00853	xi	3.52E-03	1.97E-04	0.00E+00	8.66E-04	8.69E-04	5.14E-04	3.49E-04
	TLA	21.42	yi	1.27E-02	1.86E-02	0.00E+00	5.04E-06	2.42E-04	9.35E-03	1.02E-01
			Zi,V	1.18E-02	1.63E-02	0.00E+00	5.98E-06	2.01E-04	7.63E-03	6.79E-02
Transmix [d]	ML	129	P	3.08E-02	8.01E-01	1.55E+00	4.97E-05	2.37E-03	1.55E-01	2.50E+00
	MV	60	Pi	3.50E-04	7.89E-03	1.46E-02	1.65E-08	7.89E-07	7.99E-04	2.24E-02
	PVA	5.88	xi	1.14E-02	9.84E-03	9.39E-03	3.31E-04	3.33E-04	5.15E-03	8.95E-03
	TLA	21.42	yi	5.96E-05	1.34E-03	2.48E-03	2.80E-09	1.34E-07	1.36E-04	3.81E-03
			Zi,V	1.19E-04	2.55E-03	3.23E-03	7.20E-09	2.42E-07	2.41E-04	5.47E-03

[a] Mixture property nomenclature:

Mi = molecular weight of component i, lb/lb-mole

ML = molecular weight of liquid stock, lb/lb-mole

MV = molecular weight of vapor stock, lb/lb-mole

P = vapor pressure of component i at liquid surface temperature, psia

Pi = partial pressure of component i, psia

PVA = total vapor pressure of liquid mixture, psia, values interpolated from AP-42 Table 7.1-2

TLA = maximum average liquid surface temperature, degrees C. (for tanks in Pocatello, ID with specular aluminum exterior, per TANKS 4.0.9d)

xi = liquid mole fraction of component i, lb-mole/lb-mole

yi = vapor mole fraction of component i, lb-mole/lb-mole

Zi,L = weight fraction of component i in the liquid, lb/lb

Zi,V = weight fraction of component i in the vapor, lb/lb

[b] Gasoline liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the maximum of the 12 months' daily average ambient temperatures at Pocatello, ID, listec regression from vapor pressure data available in AP-42, Table 7.1-2.

[c] Distillate fuel oil liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the maximum of the 12 months' daily average ambient temperatures at Pocatello, I regression from vapor pressure data available in AP-42, Table 7.1-2.

[d] Transmix liquid and vapor molar masses are obtained from TANKS 4.0.9d. Temperature is the maximum of the 12 months' daily average ambient temperatures at Pocatello, ID, liste average of gasoline and diesel vapor pressures, weighted by the fractions of gasoline and diesel (on a molar basis).

[e] Vapor mole fractions (Zi,V) for each species in each product are calculated using the following method based on AP-42 Section 7.1:

xi = ((Zi,L)(ML))/Mi

P = (10^(A - (B/(TLA + C))))(0.0193368)

Pi = (P)(xi)

yi = Pi/PVA

Zi,V = ((yi)(Mi))/MV = (10^(A - (B/(TLA + C)))(0.0193368)(Zi.L)(ML)/PVA/MV)

[f] The vapor pressure of biphenyl species is not evaluated with an Antoine equation. Instead, biphenyl vapor pressure as a function of temperature is regressed from saturation curve

Phenol 108-95-2 (wt%)	Styrene 100-42-5 (wt%)	Toluene 108-88-3 (wt%)	Xylenes 1330-20-7 (wt%)	Total (wt%)
	0.078	5.248	4.911	18.473
0.26		0.05	0.122	1.029
0.145	0.034	2.342	2.234	8.721

Phenol 108-95-2 (wt. frac.)	Styrene 100-42-5 (wt. frac.)	Toluene 108-88-3 (wt. frac.)	Xylenes 1330-20-7 (wt. frac.)	Total (wt. frac.)
0.00E+00	7.80E-04	5.25E-02	4.91E-02	0.185
2.60E-03	0.00E+00	5.00E-04	1.22E-03	0.010
1.45E-03	3.44E-04	2.34E-02	2.23E-02	0.087

Phenol 108-95-2	Styrene 100-42-5	Toluene 108-88-3	Xylenes 1330-20-7
94.11	104.15	92.14	106.17
7.133	7.14	6.954	7.009
1516.79	1574.51	1344.8	1426.266

174.95	224.09	219.48	215.11
AP-42	AP-42	AP-42	AP-42

ftware. Coefficients for species marked "AP-42" are from AP-42

:tion Calculations (Zi,V) [f]							
Isopropyl benzene (cumene) 98-82-8	**Methanol 67-56-1**	**Naphthalene 91-20-3**	**Phenol 108-95-2**	**Styrene 100-42-5**	**Toluene 108-88-3**	**Xylenes 1330-20-7**	**Total**
7.07E-02	1.99E+00	5.17E-03	4.96E-03	1.03E-01	4.55E-01	1.84E-01	
8.12E-05	8.19E-03	1.12E-05	0.00E+00	7.10E-05	2.38E-02	7.84E-03	
1.15E-03	4.11E-03	2.17E-03	0.00E+00	6.89E-04	5.24E-02	4.26E-02	
8.53E-06	8.61E-04	1.18E-06	0.00E+00	7.46E-06	2.50E-03	8.24E-04	
1.71E-05	4.60E-04	2.52E-06	0.00E+00	1.30E-05	3.85E-03	1.46E-03	0.017
7.07E-02	1.99E+00	5.17E-03	4.96E-03	1.03E-01	4.55E-01	1.84E-01	
2.65E-05	0.00E+00	1.29E-05	2.57E-05	0.00E+00	4.64E-04	3.98E-04	
3.75E-04	0.00E+00	2.49E-03	5.19E-03	0.00E+00	1.02E-03	2.16E-03	
3.11E-03	0.00E+00	1.51E-03	3.02E-03	0.00E+00	5.44E-02	4.67E-02	
2.88E-03	0.00E+00	1.49E-03	2.18E-03	0.00E+00	3.86E-02	3.81E-02	0.187
7.07E-02	1.99E+00	5.17E-03	4.96E-03	1.03E-01	4.55E-01	1.84E-01	
6.03E-05	5.06E-03	1.19E-05	9.86E-06	4.38E-05	1.49E-02	4.99E-03	
8.52E-04	2.53E-03	2.30E-03	1.99E-03	4.25E-04	3.27E-02	2.71E-02	
1.03E-05	8.60E-04	2.02E-06	1.68E-06	7.46E-06	2.53E-03	8.49E-04	
2.05E-05	4.59E-04	4.31E-06	2.63E-06	1.29E-05	3.89E-03	1.50E-03	0.018

d in the MET data tables of TANKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d by

ID, listed in the MET data tables of TANKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d by

ed in the MET data tables of TANKS 4.0.9d. Vapor pressure of liquid stock at this temperature is calculated in Table C-3d as an data presented in Perry's Chemical Engineer's Handbook, 6th ed., Table 3-8, shown in Table C-8e.

Table C-10a. Summary of Annual Facility HAP Emissions by Emission Unit

			Speciated Emissions (tpy)																
Emission Sources	VOC Emissions (tpy)	Species CAS No. HAP?	1,2,4-Trimethyl benzene 95-63-6 NO	2,2,4-Trimethyl pentane (Isooctane) 540-84-1 YES	Benzene 71-43-2 YES	Biphenyl 92-52-4 YES	Cresol 1319-77-3 YES	Ethanol 64-17-5 NO	Ethyl benzene 100-41-4 YES	Hexane (-n) 110-54-3 YES	Isopropyl Benzene (Cumene) 98-82-8 YES	Methanol 67-56-1 YES	Naphthalene 91-20-3 YES	Phenol 108-95-2 YES	Styrene 100-42-5 YES	Toluene 108-88-3 YES	Xylenes 1330-20-7 YES	HAP Total YES
Tank Losses [a]																			
All tanks	23.07		8.64E-02	1.34E-01	1.24E-01	6.05E-02	6.06E-02	2.37E-01	7.78E-02	2.49E-01	6.46E-02	6.88E-02	6.34E-02	0.00E+00	6.09E-02	1.99E-01	1.34E-01	1.30
Fugitive Emissions [b]																			
Valves Liquid	0.53		5.07E-03	9.24E-03	1.32E-03	5.33E-08	6.54E-05	0.00E+00	3.74E-03	4.12E-02	1.32E-03	1.71E-04	5.87E-04	6.77E-04	4.43E-06	2.07E-02	1.89E-02	0.10
Valves Vapor	0.00		4.00E-05	7.29E-05	1.04E-05	4.20E-10	5.16E-07	0.00E+00	2.95E-05	3.25E-04	1.04E-05	1.35E-06	4.63E-06	5.34E-06	3.49E-08	1.63E-04	1.49E-04	0.00
Fittings Liquid	0.10		9.43E-04	1.72E-03	2.46E-04	9.91E-09	1.22E-05	0.00E+00	6.96E-04	7.66E-03	2.46E-04	3.19E-05	1.09E-04	1.26E-04	8.24E-07	3.84E-03	3.52E-03	0.02
Fittings Vapor	0.04		4.30E-04	7.85E-04	1.12E-04	4.53E-09	5.55E-06	0.00E+00	3.18E-04	3.50E-03	1.12E-04	1.46E-05	4.99E-05	5.75E-05	3.76E-07	1.75E-03	1.61E-03	0.01
Pump Seals Liquid	0.32		3.04E-03	5.55E-03	7.94E-04	3.20E-08	3.93E-05	0.00E+00	2.25E-03	2.47E-02	7.93E-04	1.03E-04	3.53E-04	4.07E-04	2.66E-06	1.24E-02	1.14E-02	0.06
Others Liquid	0.12		1.19E-03	2.16E-03	3.09E-04	1.25E-08	1.53E-05	0.00E+00	8.75E-04	9.64E-03	3.09E-04	4.01E-05	1.37E-04	1.58E-04	1.04E-06	4.83E-03	4.42E-03	0.02
TOTAL	1.11		1.07E-02	1.95E-02	2.80E-03	1.13E-07	1.38E-04	0.00E+00	7.90E-03	8.71E-02	2.79E-03	3.62E-04	1.24E-03	1.43E-03	9.36E-06	4.37E-02	3.99E-02	0.21
Truck Loading Losses [c]																			
Gasoline	8.17		4.95E-04	1.57E-02	2.06E-02	0.00E+00	0.00E+00	0.00E+00	1.24E-03	3.57E-02	8.56E-05	2.67E-03	1.09E-05	0.00E+00	6.88E-05	2.25E-02	7.89E-03	0.11
Diesel	0.01		5.55E-05	1.01E-04	0.00E+00	5.83E-10	7.16E-07	0.00E+00	4.09E-05	4.51E-04	1.45E-05	0.00E+00	6.43E-06	7.41E-06	0.00E+00	2.26E-04	2.07E-04	0.00
Transmix	0.03		2.36E-06	6.64E-05	8.62E-05	2.94E-12	3.61E-09	0.00E+00	5.40E-06	1.52E-04	4.32E-07	1.12E-05	7.79E-08	3.73E-08	2.89E-07	9.55E-05	3.42E-05	0.00
TOTAL	8.21		5.53E-04	1.59E-02	2.06E-02	5.86E-10	7.19E-07	0.00E+00	1.28E-03	3.63E-02	1.01E-04	2.68E-03	1.74E-05	7.45E-06	6.91E-05	2.28E-02	8.14E-03	0.11
VCU Stack [d]																			
Gasoline	15.47		9.38E-04	2.98E-02	3.89E-02	0.00E+00	0.00E+00	0.00E+00	2.35E-03	6.77E-02	1.62E-04	5.05E-03	2.06E-05	0.00E+00	1.30E-04	4.26E-02	1.50E-02	0.20
Diesel	0.04		3.44E-04	6.27E-04	0.00E+00	3.62E-09	4.44E-06	0.00E+00	2.54E-04	2.80E-03	8.96E-05	0.00E+00	3.98E-05	4.59E-05	0.00E+00	1.40E-03	1.28E-03	0.01
Transmix	0.34		2.37E-05	6.66E-04	8.66E-04	2.95E-11	3.62E-08	0.00E+00	5.42E-05	1.53E-03	4.34E-06	1.12E-04	7.82E-07	3.75E-07	2.90E-06	9.59E-04	3.43E-04	0.00
TOTAL	15.85		1.31E-03	3.10E-02	3.98E-02	3.65E-09	4.47E-06	0.00E+00	2.65E-03	7.20E-02	2.56E-04	5.16E-03	6.12E-05	4.63E-05	1.33E-04	4.50E-02	1.66E-02	0.21
TOTAL FACILITY EMISSIONS	**48.24**		**9.90E-02**	**2.01E-01**	**1.87E-01**	**6.05E-02**	**6.07E-02**	**2.37E-01**	**8.96E-02**	**4.45E-01**	**6.78E-02**	**7.70E-02**	**6.47E-02**	**1.48E-03**	**6.11E-02**	**3.10E-01**	**1.98E-01**	**1.82**

[a] Tank emissions are computed using AP-42 Chapter 7.1 methods. Emission rates are shown in Table C-5.

[b] Fugitive emissions are computed based on the speciation data for liquid and vapor service. The maximum liquid or vapor weight fraction among gasoline, diesel, and transmix is multiplied by the total emission rate for each type of equipment component.

[c] Truck loading losses are computed as the product of truck losses in VOC and the vapor weight fraction of the loaded product.

[d] VCU stack emissions are computed as the product of total VOC emissions and the vapor weight fraction of the loaded product.

Table C-10b. Annual-Average Liquid and Vapor Speciation Summary Table

Speciation	1,2,4-Trimethyl benzene 95-63-6 (wt frac.)	2,2,4-Trimethyl pentane (Isooctane) 540-84-1 (wt frac.)	Benzene 71-43-2 (wt frac.)	Biphenyl 92-52-4 (wt frac.)	Cresol 1319-77-3 (wt frac.)	Ethanol 64-17-5 (wt frac.)	Ethyl benzene 100-41-4 (wt frac.)	Hexane (-n) 110-54-3 (wt frac.)	Isopropyl Benzene (Cumene) 98-82-8 (wt frac.)	Methanol 67-56-1 (wt frac.)	Naphthalene 91-20-3 (wt frac.)	Phenol 108-95-2 (wt frac.)	Styrene 100-42-5 (wt frac.)	Toluene 108-88-3 (wt frac.)	Xylenes 1330-20-7 (wt frac.)
Gasoline Liquid Weight Fraction	2.12E-02	1.97E-02	1.29E-02				9.26E-03	1.34E-02	1.50E-03	1.43E-03	3.03E-03		7.80E-04	5.25E-02	4.91E-02
Gasoline Vapor Weight Fraction	6.06E-05	1.92E-03	2.52E-03				1.52E-04	4.38E-03	1.05E-05	3.26E-04	1.33E-06		8.43E-06	2.75E-03	9.67E-04
Diesel Liquid Weight Fraction	2.25E-03	1.20E-04		7.10E-04	5.00E-04		2.90E-04	1.60E-04	2.40E-04		1.70E-03	2.60E-03		5.00E-04	1.22E-03
Diesel Vapor Weight Fraction	9.65E-03	1.76E-02		1.01E-07	1.24E-04		7.12E-03	7.84E-02	2.51E-03		1.12E-03	1.29E-03		3.93E-02	3.60E-02
Transmix Liquid Weight Fraction	1.06E-02	8.73E-03	5.70E-03	3.97E-04	2.80E-04		4.25E-03	5.99E-03	7.96E-04	6.31E-04	2.29E-03	1.45E-03	3.44E-04	2.34E-02	2.23E-02
Transmix Vapor Weight Fraction	6.87E-05	1.94E-03	2.52E-03	8.58E-11	1.05E-07		1.58E-04	4.44E-03	1.26E-05	3.26E-04	2.27E-06	1.09E-06	8.42E-06	2.79E-03	9.96E-04
Maximum Liquid Weight Fraction [a]	2.12E-02	1.97E-02	1.29E-02	7.10E-04	5.00E-04		9.26E-03	1.34E-02	1.50E-03	1.43E-03	3.03E-03	2.60E-03	7.80E-04	5.25E-02	4.91E-02
Maximum Vapor Weight Fraction [b]	9.65E-03	1.76E-02	2.52E-03	1.01E-07	1.24E-04		7.12E-03	7.84E-02	2.51E-03	3.26E-04	1.12E-03	1.29E-03	8.43E-06	3.93E-02	3.60E-02

[a] Maximum liquid and vapor weight fractions are the maximum fractions of gasoline, transmix, and diesel.

Table C-11. Facilitywide GHG Emissions, Calculated in CO2 Equivalents (CO2e) a

Species	Captured VOC (tpy)	Vapor Molar Mass (lb/lbmol)	Fuel Consumption [b] (MMscf/yr)	Heating Value [c] (Btu/scf)	Maximum Annual Heat Input (MMBtu/yr)	CO_2 Emission Factor [d] (kg/MMBtu)	CO_2 Emission Rate (kg/yr)
VCU Stack							
Gasoline	1020.85	60	12.58	1,388	17,458	59.00	1.03E+06
Diesel	0.72	130	0.00	1,388	6	59.00	3.35E+02
Transmix	4.29	60	0.05	1,388	73	59.00	4.32E+03
VCU Pilot			0.50	1,020	510	53.02	2.70E+04
Other Combustion Sources							
Space Heater					919.80	53.02	4.88E+04
TOTAL			**13.13**		**18,967**		1.11E+06

[a] Combusted VOC is conservatively assumed to be 100% of VOC captured at the loading rack. Captured VOC is the product of the uncontrolled emission factor and maximum th

	EF, lb/Mgal	TP, Mgal/yr
Gasoline	5.51	370,801
Diesel	0.008	191,453
Transmix	3.40	2,520

[b] VOC fuel consumption at the loading rack in MMscf is calculated according to the following formula:
(VOC captured, tpy) * (2000 lb/ton) / (molar mass, lb/lbmol) * (0.73 scf atm/lbmol °R) (loading temperature, °R) / (1 atm) * (1 MMscf/1,000,000 scf) = (VOC combusted

[c] It is assumed that VOC combusted at the VCU has a heating value similar to that of refinery fuel gas, due to the presence of hydrocarbons larger than methane in the vapor stre
CFR 98.

[d] CO_2 emission factor for fuel gas obtained from Table C-1 in 40 CFR 98 Subpart C. Table C-2 does not list CH_4 and N_2O emission factors for fuel gas. Therefore, factors for natur

[e] VCU combusts VOC vapors captured at the loading rack, as well as natural gas.
Emission rate, kg/yr CO_2e = (CO_2 emission rate, kg/yr) * (1 kg CO_2e / kg CO_2) + (CH_4 emission rate, kg/yr) * (21 kg CO_2e / kg CH_4) + (N_2O emission rate, kg/yr) * (310 kg
Conversions to CO_2e are found in Table A-1 in 40 CFR 98 Subpart C, which gives the 100-year global warming potentials for each species using CO_2 as a reference species.

CH_4 Emission Factor [d] (kg/MMBtu)	CH_4 Emission Rate (kg/yr)	N_2O Emission Factor [d] (kg/MMBtu)	N_2O Emission Rate (kg/yr)	Total Emission Rate [e] (kg/yr CO_2e)	(tpy CO_2e)
1.00E-03	1.75E+01	1.00E-04	1.75E+00	1.03E+06	1136.43
1.00E-03	5.67E-03	1.00E-04	5.67E-04	3.35E+02	0.37
1.00E-03	7.32E-02	1.00E-04	7.32E-03	4.33E+03	4.77
1.00E-03	5.10E-01	1.00E-04	5.10E-02	2.71E+04	29.84
1.00E-03	9.20E-01	1.00E-04	9.20E-02	4.88E+04	53.81
	1.90E+01		1.90E+00	**1.11E+06**	**1,225.22**

ıroughput of each product, as shown below, and at Table C-7:

, MMscf/yr)

eam. The heating value presented here is the default higher heating value for fuel gas specified in Table C-1 to 40

al gas are used.

CO_2e / kg N_2O)

Table C-12a. Pre/Post-Project Space Heater Combustion Duty

Quantity	Furnaces and Heaters [a]
Furnace 1 Heat Input, Btu/hr	105,000
Maximum Heat Input, Btu/hr	105,000
Operating Hours, hr/yr	8,760
Natural Gas Higher Heating Value, BTU/scf	1,020
Maximum Fuel Consumption, MMscf/yr	0.90

[a] The Pocatello facility operates only one gas-fired space heater. Other heaters are electric.

Table C-12b. Pre/Post-Project Loading Vapor Production (Annual)

	Captured VOC [a] (tpy)	Vapor Molar Mass (lb/lbmol)	Fuel Consumption [b] (MMscf/yr)
VCU Stack			
Gasoline	1,020.85	60	12.58
Diesel	0.72	130	0.00
Transmix	4.29	60	0.05
VCU Pilot [c]			0.50
Total			13.13
Other Combustion Sources			
Space Heaters, Furnaces [d]			0.90
TOTAL			**14.04**

[a] Combusted VOC is conservatively assumed to be 100% of VOC captured at the loading rack. Captured VOC is the product of the uncontrolled emission factor and maximum throughput of each product, as shown below:

	EF, lb/Mgal	TP, Mgal/yr
Gasoline	5.51	370,801
Diesel	0.01	191,453
Transmix	3.40	2,520

[b] Vapors combusted in MMscf/yr calculated as:

(tpy VOC) * (2,000 lb/ton) * (vapor MW, in lb VOC/ lbmol VOC) * R (scf atm/lbmol °R)
* Annual average temperature (°R) / 1 atm

R (Ideal Gas Constant)	0.73	scf atm/lbmol °R
Temperature	506	°R

[c] VCU pilot is based on scf natural gas listed in technical specifications for the unit of:
0.50 MMscf/yr

[d] Space heater consumption calculated in Table C-12a above.

Table C-13. Natural Gas Combustion PTE - VOC and HAPs

Pollutant [a]	CAS No.	Emission Factor [b] (lb/MMscf)	VCU Emissions [c,d] (tpy)	Heater Emissions [d] (tpy)	Totals (tpy)
NO_X		1.00E+02	--	4.51E-02	4.51E-02
CO		8.40E+01	--	3.79E-02	3.79E-02
PM_{10}		7.60E+00	--	3.43E-03	3.43E-03
$PM_{2.5}$		7.60E+00	--	3.43E-03	3.43E-03
SO_2		6.00E-01	--	2.71E-04	2.71E-04
VOC		5.50E+00	--	2.48E-03	2.48E-03
Lead		5.00E-04	3.28E-06	2.25E-07	3.51E-06
2-Methylnaphthalene	91-57-6	2.40E-05	1.58E-07	1.08E-08	1.68E-07
3-Methylchloranthrene	56-49-5	1.80E-06	1.18E-08	8.12E-10	1.26E-08
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	1.05E-07	7.21E-09	1.12E-07
Acenaphthene	83-32-9	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Acenaphthylene	203-96-8	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Anthracene	120-12-7	2.40E-06	1.58E-08	1.08E-09	1.68E-08
Benz(a)anthracene	56-55-3	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Benzene	71-43-2	2.10E-03	1.38E-05	9.47E-07	1.47E-05
Benzo(a)pyrene	50-32-8	1.20E-06	7.88E-09	5.41E-10	8.42E-09
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Benzo(g,h,i)perylene	191-24-2	1.20E-06	7.88E-09	5.41E-10	8.42E-09
Benzo(k)fluoranthene	205-82-3	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Chrysene	218-01-9	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	7.88E-09	5.41E-10	8.42E-09
Dichlorobenzene	25321-22-6	1.20E-03	7.88E-06	5.41E-07	8.42E-06
Fluoranthene	206-44-0	3.00E-06	1.97E-08	1.35E-09	2.11E-08
Fluorene	86-73-7	2.80E-06	1.84E-08	1.26E-09	1.97E-08
Formaldehyde	50-00-0	7.50E-02	4.93E-04	3.38E-05	5.26E-04
Hexane	110-54-3	1.80E+00	1.18E-02	8.12E-04	1.26E-02
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.18E-08	8.12E-10	1.26E-08
Naphthalene	91-20-3	6.10E-04	4.01E-06	2.75E-07	4.28E-06
Phenanathrene	85-01-8	1.70E-05	1.12E-07	7.67E-09	1.19E-07
Pyrene	129-00-0	5.00E-06	3.28E-08	2.25E-09	3.51E-08
Toluene	108-88-3	3.40E-03	2.23E-05	1.53E-06	2.39E-05
Arsenic	7440-38-2	2.00E-04	1.31E-06	9.02E-08	1.40E-06
Beryllium	7440-41-7	1.20E-05	7.88E-08	5.41E-09	8.42E-08
Cadmium	7440-43-9	1.10E-03	7.22E-06	4.96E-07	7.72E-06
Chromium	7440-47-3	1.40E-03	9.19E-06	6.31E-07	9.83E-06
Cobalt	7440-48-4	8.40E-05	5.52E-07	3.79E-08	5.90E-07
Manganese	7439-96-5	3.80E-04	2.50E-06	1.71E-07	2.67E-06
Mercury	7439-97-6	2.60E-04	1.71E-06	1.17E-07	1.82E-06
Nickel	7440-02-0	2.10E-03	1.38E-05	9.47E-07	1.47E-05
Selenium	7782-49-2	2.40E-05	1.58E-07	1.08E-08	1.68E-07
TOTAL HAP		**1.89E+00**	**1.24E-02**	**8.51E-04**	**1.33E-02**

[a] This PTC action seeks synthetic minor limits without proposing any physical changes or changes to the method of operation. The PTE represented here is the total PTE of each unit.

[b] Emission factors from AP-42, Section 1.4, Combustion of Natural Gas (7/98).

[c] Emissions of NO_X, CO, VOC, PM, and SO_2 are calculated for the VCU based on the factors and methods in Table C-7a and C-7b.

[d] Emission calculation is as follows: Emissions, tpy = (Fuel consumption, MMscf/yr) (Emission factor, lb/MMscf) / (2,000 lb/ton)

VCU, MMscf/yr combustion rate:	13.13	MMscf/yr	(includes captured loading vapors)
NG combustion sources, MMscf/yr combustion rate:	0.90	MMscf/yr	

Table C-14a. Temperature Correction for Short-Term Loading Emission Factors

Quantity	UOM	Product Loading Rack		
		Gasoline Loading	Diesel Loading	Transmix Loading
VOC Uncontrolled Annual Emission Factor [a]	lb/gal	5.51E-03	7.51E-06	3.40E-03
Annual Average Temperature	°R	506	506	506
Maximum Daily Average Temperature	°R	530	530	530
Annual Average Vapor Pressure	psia	6.2	0.0039	3.837
Maximum Daily Average Vapor Pressure	psia	9.5	0.0085	5.876
VOC Uncontrolled Short-Term Emission Factor [a]	lb/gal	8.05E-03	1.56E-05	4.97E-03
VOC VCU Stack Short-Term Emission Factor [b]	lb/gal	8.34E-05	7.75E-07	2.47E-04
VOC Fugitive Short-Term Emission Factor [b]	lb/gal	6.44E-05	1.25E-07	3.98E-05

[a] Annual loading emission factors for VOC are calculated in Table C-7 using Equation 1 of AP-42 Section 5.2.
Equation 1 is L = 12.46*S*P*M/T*(1-eff/100)
Of these terms, the vapor pressure P and the average loading temperature T vary depending on whether T is evaluated for an annual average or for a short-term daily average.
Therefore, to correct the emission factor L for use as a short-term emission factor, the annual factor is divided by the ratio (P / T) using the annual values in Table C-7, and multiplied by the same ratio (P / T) for short-term values using the vapor pressures below interpolated from AP-42 Table 7.1-2:

$P_{Gasoline\ RVP15}$ = 9.52
$P_{Distillate\ \#\ 2}$ = 0.0085
$P_{Transmix}$ = 5.876

[b] Capture efficiency and control efficiencies are given in Table C-7 and are applied here as well.
Loading rack fugitive emissions = (Loading emissions) * (1 - capture eff.)
VCU stack emissions = (Loading emissions) * (capture eff.) * (1 - control eff.)
Exception to the above: the VCU stack emissions are limited in mg/L for gasoline loading.

Capture eff. = 99.2%
Control eff. = 95%
Emission limit = 10 mg/L

Table C-14b. Short-Term Emissions of Criteria Pollutants from the VCU

Product	Quantity Loaded [a] (gpm)	VOC Emission Factor [b,c] (mg/L)	(lb/gal)	VOC Emissions [d] (lb/hr)	Percent Hourly Uptime [a] (%, hr/hr)
Gasoline	5,500	10	8.35E-05	27.5	75%
Diesel	3,300		7.75E-07	0.2	75%
Transmix	550		2.47E-04	8.1	75%
Total	9,350			35.84	

[a] The short-term emissions from loading rack and VCU are based on the maximum loading rates of the loading rack.

75% For NO_X and CO calculations on an hourly basis, this percent uptime of pumps is applied to allow for truck i

[b] Permit T1-050032, Condition 3.2, stipulates that TOC emissions from the VCU shall not exceed 10 milligrams per liter of liquid throughput into gasoline tank trucks, per 40 CFR 60.502(b). Di and transmix do not meet the definition of gasoline, so the AP-42 loading equation in footnote 'b' of Table C-7 is used for these liquids.

[c] Loading emission factors for diesel fuel and transmix are calculated using Equation 1 in AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids, dated July 2008. Calculations Table C-14a.

S =	0.6	Saturation factor for tank trucks, submerged loading, normal service. AP-42 Table 5.2-1, 6/08.
$P_{Distillate\ \#\ 2}$ =	0.0085	(psia) True vapor pressure calculated based on data for Distillate Fuel Oil No. 2 provided in AP-42, Section November 2006 (see Table C-3d).
$M_{Distillate\ \#\ 2}$ =	130	(lb/lbmol) Molecular weight of Distillate Fuel Oil No. 2 vapor at 60 F (AP-42, Section 7, Table 7.1-2, dated N
$P_{Gasoline\ RVP15}$ =	9.52	(psia) True vapor pressure calculated based on data for Gasoline RVP 15 (see Table C-3d).
$M_{Gasoline\ RVP15}$=	60	(lb/lbmol) Molecular weight of Gasoline RVP 15 vapor at 60 F (AP-42, Section 7, Table 7.1-2, dated Novemb
$P_{Transmix}$ =	5.876	(psia) True vapor pressure interpolated based on data for Gasoline RVP 15 and diesel fuel provided in AP-4 2, dated November 2006. See Table C-3d for calculations.
$M_{Transmix}$=	60	(lb/lbmol) Molecular weight of transmix vapor at 60 F. See Table C-3c for calculations.
T =	530	(°R) Maximum Month's Average of Daily Average Ambient Temperatures for Pocatello, ID, from EPA's TAN data tables.
eff=	0.95	Assumed average control efficiency for VCU per AP-42, Section 5.2, page 5.2-6 (range provided between 90 used for diesel fuel and transmix.

[d] Emissions of VOC from the loading rack are calculated as: (loading rate, gpm) * (emission factor, lb/Mgal) (Mgal / 1,000 gal) (60 min/hr)

Table C-14c. Calculated Short-Term Fuel Combustion at the VCU in scf

	Captured VOC [a] (lb/hr)	Vapor Molar Mass [b] (lb/lbmol)	Vapor Combustion [c] (MMscf/hr)
Gasoline	2656.65	60	1.71E-02
Diesel	3.10	130	9.22E-06
Transmix	164.11	60	1.06E-03
VCU Pilot			5.71E-05
TOTAL			**1.83E-02**

[a] Per AP-42, Chapter 5, section 5.2.2.1.1 page 5.2-6, not all of the displaced vapors reach the control device because of leakage from both the tank truck and collection system. The following "uncontrolled" loading emission factors are calculated in Table C-14a, from AP-42 Equation 1 used above. These factors are used to determine the rate of VOC capture in lb/hr.

$EF_{Uncontrolled}$=	8.05E-03	(lb/gal) Uncontrolled Organic Emission Factor for Gasoline, submerged loading
$EF_{Uncontrolled}$=	1.56E-05	(lb/gal) Uncontrolled Organic Emission Factor for Distillate Oil No.2 for Tank-Trucks
$EF_{Uncontrolled}$=	4.97E-03	(lb/gal) Uncontrolled Organic Emission Factor for Transmix for Tank-Trucks

[b] Vapor molar masses provided in AP-42 Table 7.1-2.

[c] Fuel combustion rate in MMscf/hr is calculated so that speciated combustion emissions may be estimated using AP-42 factors. The VCU pilot has a maximum combustion rate of 0.5 MMscf/yr, which is a constant flow rate converted to MMscf/hr by dividing by 8,760. Loading vapor flow rates (lb/hr) are converted to MMscf/hr using the equation:

Flow rate, MMscf/hr = flow rate, lb/hr * (molar mass, lb/lbmol of vapors) $^{-1}$ * 0.73 (scf atm / lbmol-°R) / 1 atm * 511 °R / 10^6

Table C-14d. Truck Loading Rack and VCU - Short-Term Emissions Using MMBtu/hr Threshold

Variable	Value	Units of Measure		
Flow of VOC Vapors from Rack [a]	18,263	scf/hr at	46.68	°F
Molar Gas Constant	0.73	atm ft^3 / lbmol °R		
Molar Flow of Hydrocarbon to VCU [b]	0.00	mol/s hydrocarbons as C_4H_{10}		
HHV as Butane [c]	2,877.6	kJ/mol HHV		
Maximum Heat Input Rate to VCU	61.12	MMBtu/hr HHV		

Emission Factors [d] (lb/MMBtu)		Emissions (lb/hr)
PM	7.84E-03	0.48
PM_{10}	7.84E-03	0.48
$PM_{2.5}$	7.84E-03	0.48
SO_2 [e]	5.58E-04	0.03
NO_X	1.47E-01	8.99
CO	8.24E-02	5.03

[a] Based on the calculated uncontrolled vapor emissions of the maximum short-term throughput of each product.

[b] Calculated as: (vapor flow, acf/min)*(vol% HC as propane, vol%)/(0.7302 atm ft^3 / lbmol °R)*(1 atm)/(0 °F + 459.67 F°)*(453.5924 g/lb)/(60 s/min)

[c] Per CRC Handbook of Chemistry and Physics, 86th Edition, p. 5-70.

[d] Emission factors from AP-42, Section 1.5, external combustion of butane vapors, Tables 1.5-1, converted to lb/MMBtu using the 102 x 10^6 BTU/10^3 gal basis on which the AP-42 factors are based.

[e] The emission factor in AP-42, Section 1.5 for SO_2 is (0.09)*(S) lb/10^3 gal fuel combusted, where S is the sulfur content of the fuel in gr/100 ft^3. A sulfur content of 0.59 gr / 100 scf is calculated, based on a very conservative assumption that 100% of sulfur in gasoline is vaporized.

Gasoline sulfur content:	80	ppmwt based on federal EPA Tier 2 cap for gasoline sulfur
Density of gasoline:	5.6	lb/gal
Vapors generated during loading:	8.05E-03	lb vapors / gal loaded
Gasoline vapor molar mass	60.00	lb / lbmol
Temperature	506.35	°R
Gasoline Vapor Mass	0.16	lb vapor / scf vapor
Gasoline Vapor Concentration of Sulfur	9.03E-03	lb S / scf vapor
Gasoline Vapor Concentration of Sulfur	0.63	gr S / 100 scf vapor

Hourly Throughput [a] (gal/hr)
247,500
148,500
24,750

ngress/egress from the l

esel fuel, jet kerosene,

are also presented in

7, Table 7.1-2, dated

ovember 2006)

ɔer 2006)
-2, Section 7, Table 7.1-

KS 4.0.9d meteorology

-99%). Efficiency is

Table C-15. Speciated Short-Term Combustion Emissions

	CAS No.	Emission Factor [a] (lb/MMscf)	VCU Emissions [b] (lb/hr)	Space Heater Emissions [c] (lb/hr)
PM_{10}	--	7.60E+00	--	7.82E-04
$PM_{2.5}$	--	7.60E+00	--	7.82E-04
SO_2	--	6.00E-01	--	6.18E-05
2-Methylnaphthalene	91-57-6	2.40E-05	4.38E-07	2.47E-09
3-Methylchloranthrene	56-49-5	1.80E-06	3.29E-08	1.85E-10
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	2.92E-07	1.65E-09
Acenaphthene	83-32-9	1.80E-06	3.29E-08	1.85E-10
Acenaphthylene	203-96-8	1.80E-06	3.29E-08	1.85E-10
Anthracene	120-12-7	2.40E-06	4.38E-08	2.47E-10
Benz(a)anthracene	56-55-3	1.80E-06	3.29E-08	1.85E-10
Benzene	71-43-2	2.10E-03	3.84E-05	2.16E-07
Benzo(a)pyrene	50-32-8	1.20E-06	2.19E-08	1.24E-10
Benzo(b)fluoranthene	205-99-2	1.80E-06	3.29E-08	1.85E-10
Benzo(g,h,i)perylene	191-24-2	1.20E-06	2.19E-08	1.24E-10
Benzo(k)fluoranthene	205-82-3	1.80E-06	3.29E-08	1.85E-10
Chrysene	218-01-9	1.80E-06	3.29E-08	1.85E-10
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	2.19E-08	1.24E-10
Dichlorobenzene	25321-22-6	1.20E-03	2.19E-05	1.24E-07
Fluoranthene	206-44-0	3.00E-06	5.48E-08	3.09E-10
Fluorene	86-73-7	2.80E-06	5.11E-08	2.88E-10
Formaldehyde	50-00-0	7.50E-02	1.37E-03	7.72E-06
Hexane	110-54-3	1.80E+00	3.29E-02	1.85E-04
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	3.29E-08	1.85E-10
Naphthalene	91-20-3	6.10E-04	1.11E-05	6.28E-08
Nitrous Oxide	10024-97-2	3.06E-01	5.59E-03	3.15E-05
Phenanathrene	85-01-8	1.70E-05	3.10E-07	1.75E-09
Pyrene	129-00-0	5.00E-06	9.13E-08	5.15E-10
Toluene	108-88-3	3.40E-03	6.21E-05	3.50E-07
Arsenic	7440-38-2	2.00E-04	3.65E-06	2.06E-08
Beryllium	7440-41-7	1.20E-05	2.19E-07	1.24E-09
Cadmium	7440-43-9	1.10E-03	2.01E-05	1.13E-07
Chromium	7440-47-3	1.40E-03	2.56E-05	1.44E-07
Cobalt	7440-48-4	8.40E-05	1.53E-06	8.65E-09
Manganese	7439-96-5	3.80E-04	6.94E-06	3.91E-08
Mercury	7439-97-6	2.60E-04	4.75E-06	2.68E-08
Nickel	7440-02-0	2.10E-03	3.84E-05	2.16E-07
Selenium	7782-49-2	2.40E-05	4.38E-07	2.47E-09

[a] Emission factor for nitrous oxide from 40 CFR 98 Subpart C, Table C-2. Converted to lb/MMscf from kg/MMBtu using the HHV of 1,388 Btu/scf for fuel gas. Other emission factors from AP-42, Section 1.4, Combustion of Natural Gas (7/98).

[b] VCU MMscfh combustion rate: 1.83E-02 as calculated in Table C-14c.

[c] Space heater MMscfh combustion rate: 1.03E-04 as shown in Table C-13.

Table C-16a. VCU Stack, Speciated Emissions from Uncombusted Vapor

Pollutant		Gasoline Loading Emission Factor (lb/gal)	Diesel Loading Emission Factor (lb/gal)	Transmix Loading Emission Factor (lb/gal)	
VOC		8.34E-05	7.75E-07	2.47E-04	
Pollutant	**CAS No.**	**Gasoline Loading Emission Factor (lb/gal)**	**Diesel Loading Emission Factor (lb/gal)**	**Transmix Loading Emission Factor (lb/gal)**	**Emissions (lb/hr)**
1,2,4-Trimethylbenzene	95-63-6	8.79E-09	9.13E-09	2.94E-08	5.68E-03
2,2,4-Trimethylpentane	540-84-1	2.12E-07	1.26E-08	6.30E-07	9.32E-02
Benzene	71-43-2	2.70E-07	0.00E+00	7.97E-07	1.15E-01
Biphenyl	92-52-4	0.00E+00	4.64E-12	1.78E-12	9.77E-07
Cresols	1319-77-3	0.00E+00	1.56E-10	5.97E-11	3.28E-05
Ethylbenzene	100-41-4	1.93E-08	5.92E-09	5.94E-08	9.51E-03
Hexane (-n)	110-54-3	4.50E-07	5.26E-08	1.35E-06	2.03E-01
Isopropyl benzene (cumene)	98-82-8	1.43E-09	2.23E-09	5.07E-09	1.08E-03
Methanol	67-56-1	3.84E-08	0.00E+00	1.13E-07	1.64E-02
Naphthalene	91-20-3	2.10E-10	1.15E-09	1.06E-09	3.33E-04
Phenol	108-95-2	0.00E+00	1.69E-09	6.49E-10	3.57E-04
Styrene	100-42-5	1.08E-09	0.00E+00	3.19E-09	4.62E-04
Toluene	108-88-3	3.21E-07	2.99E-08	9.59E-07	1.44E-01
Xylenes	1330-20-7	1.22E-07	2.95E-08	3.71E-07	5.82E-02

[a] Loading emission factors for VOC are calculated in Table C-14a.

[b] Speciated emission factors are calculated as the product of the VOC emission factor and the vapor speciation presented in Table C-9d.

[c] Speciated emissions are the sum of the products of the loading rates presented in Table C-14b (shown below) with the emission factors shown in this table. Speciated emissions are summed across all products for a maximum worst-case hourly emission rate.

Gasoline	5,500	gpm
Diesel	3,300	gpm
Transmix	550	gpm

Table C-16b. Product Loading Rack Short-Term Speciated Fugitive Emissions

Pollutant		Gasoline Loading Emission Factor (lb/gal)	Diesel Loading Emission Factor (lb/gal)	Transmix Loading Emission Factor (lb/gal)	
VOC - Controlled		6.44E-05	1.25E-07	3.98E-05	
Pollutant	**CAS No.**	**Gasoline Loading Emission Factor (lb/gal)**	**Diesel Loading Emission Factor (lb/gal)**	**Transmix Loading Emission Factor (lb/gal)**	**Emissions (lb/hr)**
1,2,4-Trimethylbenzene	95-63-6	6.78E-09	1.47E-09	4.75E-09	2.69E-03
2,2,4-Trimethylpentane	540-84-1	1.63E-07	2.04E-09	1.02E-07	5.77E-02
Benzene	71-43-2	2.08E-07	0.00E+00	1.29E-07	7.30E-02
Biphenyl	92-52-4	0.00E+00	7.48E-13	2.86E-13	1.58E-07
Cresols	1319-77-3	0.00E+00	2.51E-11	9.63E-12	5.30E-06
Ethylbenzene	100-41-4	1.49E-08	9.55E-10	9.57E-09	5.43E-03
Hexane (-n)	110-54-3	3.47E-07	8.49E-09	2.18E-07	1.23E-01
Isopropyl benzene (cumene)	98-82-8	1.10E-09	3.60E-10	8.17E-10	4.61E-04
Methanol	**67-56-1**	2.96E-08	0.00E+00	1.83E-08	1.04E-02
Naphthalene	91-20-3	1.62E-10	1.86E-10	1.72E-10	9.61E-05
Phenol	108-95-2	0.00E+00	2.73E-10	1.05E-10	5.76E-05
Styrene	100-42-5	8.34E-10	0.00E+00	5.15E-10	2.92E-04
Toluene	108-88-3	2.48E-07	4.82E-09	1.55E-07	8.78E-02
Xylenes	1330-20-7	9.39E-08	4.77E-09	5.98E-08	3.39E-02

[a] Loading emission factors for VOC are listed in Table C-14a.

[b] Speciated emission factors are calculated as the product of the VOC emission factor and the vapor speciation presented in Table C-9d.

[c] Speciated emissions are the sum of the products of the loading rates presented in Table C-14b (shown below) with the emission factors shown in this table. Speciated emissions are summed across all products for a maximum worst-case hourly emission rate.

Gasoline	5,500	gpm
Diesel	3,300	gpm
Transmix	550	gpm

Table C-17a. Toxic Air Pollutant Threshold Comparisons

Pollutant	CAS No.	Loading Rack Fugitive Emissions [a] (lb/hr)	VCU Stack Emissions [b] (lb/hr)	Small Heater Emissions [b] (lb/hr)
1,2,4-Trimethylbenzene	95-63-6	2.69E-03	5.68E-03	0.00E+00
2,2,4-Trimethylpentane	540-84-1	5.77E-02	9.32E-02	0.00E+00
Benzene	71-43-2	7.30E-02	1.15E-01	2.16E-07
Biphenyl	92-52-4	1.58E-07	9.77E-07	0.00E+00
Cresols	1319-77-3	5.30E-06	3.28E-05	0.00E+00
Ethylbenzene	100-41-4	5.43E-03	9.51E-03	0.00E+00
Hexane (-n)	110-54-3	1.23E-01	2.36E-01	1.85E-04
Isopropyl benzene (cumene)	98-82-8	4.61E-04	1.08E-03	0.00E+00
Methanol	67-56-1	1.04E-02	1.64E-02	0.00E+00
Naphthalene	91-20-3	9.61E-05	3.44E-04	6.28E-08
Naphthalene	91-20-3	9.61E-05	3.44E-04	6.28E-08
Phenol	108-95-2	5.76E-05	3.57E-04	0.00E+00
Styrene	100-42-5	2.92E-04	4.62E-04	0.00E+00
Toluene	108-88-3	8.78E-02	1.44E-01	3.50E-07
Xylenes	1330-20-7	3.39E-02	5.82E-02	0.00E+00
Dichlorobenzene	25321-22-6	--	2.19E-05	1.24E-07
Formaldehyde	50-00-0	--	1.37E-03	7.72E-06
Nitrous Oxide	10024-97-2	--	5.59E-03	3.15E-05
Arsenic	7440-38-2	--	3.65E-06	2.06E-08
Beryllium	7440-41-7	--	2.19E-07	1.24E-09
Cadmium	7440-43-9	--	2.01E-05	1.13E-07
Chromium	7440-47-3	--	2.56E-05	1.44E-07
Cobalt	7440-48-4	--	1.53E-06	8.65E-09
Manganese	7439-96-5	--	6.94E-06	3.91E-08
Mercury	7439-97-6	--	4.75E-06	2.68E-08
Nickel	7440-02-0	--	3.84E-05	2.16E-07
Selenium	7782-49-2	--	4.38E-07	2.47E-09
7-PAH		--	2.08E-07	1.17E-09
Benz(a)anthracene	56-55-3	--	3.29E-08	1.85E-10
Benzo(a)pyrene	50-32-8	--	2.19E-08	1.24E-10
Benzo(b)fluoranthene	205-99-2	--	3.29E-08	1.85E-10
Benzo(k)fluoranthene	205-82-3	--	3.29E-08	1.85E-10
Dibenzo(a,h)anthracene	53-70-3	--	2.19E-08	1.24E-10
Chrysene	218-01-9	--	3.29E-08	1.85E-10
Indeno(1,2,3-cd)pyrene	193-39-5	--	3.29E-08	1.85E-10
Other PAH		--	1.40E-06	7.91E-09
2-Methylnaphthalene	91-57-6	--	4.38E-07	2.47E-09
7,12-Dimethylbenz(a)anthracen	57-97-6	--	2.92E-07	1.65E-09
Benzo(g,h,i)perylene	191-24-2	--	2.19E-08	1.24E-10
3-Methylcholanthrene	56-49-5	--	3.29E-08	1.85E-10
Acenaphthene	83-32-9	--	3.29E-08	1.85E-10
Acenaphthylene	203-96-8	--	3.29E-08	1.85E-10
Anthracene	120-12-7	--	4.38E-08	2.47E-10
Fluoranthene	206-44-0	--	5.48E-08	3.09E-10
Fluorene	86-73-7	--	5.11E-08	2.88E-10
Phenanathrene	85-01-8	--	3.10E-07	1.75E-09
Pyrene	129-00-0	--	9.13E-08	5.15E-10

[a] Product loading rack short-term emissions are calculated in Table C-16b.

[b] Short-term emissions from the VCU stack are computed in Tables C-15 and C-16a. The sum for each pollutant of emission rates in Tables C-15 and C-16a is presented here.

[c] Screening emission levels and Allowable Ambient Concentrations (AACs) are given in Sections 585 and 586 of IDAPA 58.01.01. The EL for naphthalene is set to the PAH EL and annual averaging period, based on correspondence with Cheryl Robinson, July 2, 2014. The compliance strategy taken for each TAP is as follows:

Benzene: Gasoline is the only petroleum product containing benzene emissions (diesel and jet products do not contain appreciable amounts of benzene). Benzene emissions from gasoline storage tanks, gasoline loading, and leaks from equipment in gasoline service are regulated under NESHAP Subpart BBBBBB. Therefore, emissions of benzene are deemed to be in compliance with the TAP program per IDAPA 58.01.01.210.20.

Naphthalene: Naphthalene is emitted from tank modifications, the product loading rack, the VCU, and leaks from new equipment components. The uncontrolled emission rate of naphthalene exceeds the screening EL for naphthalene when treated as a PAH, but the uncontrolled emission rate does not exceed the screening EL for naphthalene as a non-carcinogenic TAP. The compliance strategy taken for naphthalene is to demonstrate that the controlled ambient concentration of naphthalene impacts from the PTC project are less than the AAC established for naphthalene.

All Other TAP: As shown in the "Uncontrolled TAP Emissions" column, the uncontrolled emission rate of the pollutant is below the screening EL promulgated by IDEQ for the TAP species. The "Uncontrolled TAP Emissions" column is based on the sum of the preceding columns, except that in lieu of including VCU emissions, the product loading rack emissions are scaled upward by a factor of 125. This factor of 125 accounts for the fact that in current operation, emissions from the TAP are captured according to the capture efficiency below. Therefore, scaling the loading rack's current emissions by a factor greater than the factor calculated below is representative of the loading rack's completely uncontrolled emissions.

Capture Eff.	99.2%	
Uncaptured:	0.8%	= 100% - Capture Eff., %

Table C-17b. Toxic Air Pollutant Threshold Comparisons (Cont'd)

Pollutant	CAS No.	Total TAP Emissions for PTC Permitting (lb/hr)	Uncontrolled TAP Emissions for PTC Permitting [c] (lb/hr)	Screening Emission Level [c] (lb/hr)	Uncontrolled Emissions Exceeding Screening Level? (Y/N)
1,2,4-Trimethylbenzene	95-63-6	8.37E-03	3.36E-01	8.2	NO
2,2,4-Trimethylpentane	540-84-1	1.51E-01	7.21E+00	23.3	NO
Benzene	71-43-2	1.88E-01	9.12E+00	8.00E-04	YES
Biphenyl	92-52-4	1.13E-06	1.97E-05	0.1	NO
Cresols	1319-77-3	3.81E-05	6.62E-04	1.47	NO
Ethylbenzene	100-41-4	1.49E-02	6.79E-01	29	NO
Hexane (-n)	110-54-3	3.60E-01	1.54E+01	12	YES
Isopropyl benzene (cumene)	98-82-8	1.54E-03	5.77E-02	16.3	NO
Methanol	67-56-1	2.68E-02	1.30E+00	17.3	NO
Naphthalene	91-20-3	4.41E-04	1.20E-02	9.1E-05	YES
Naphthalene	91-20-3	4.41E-04	1.20E-02	3.33	NO
Phenol	108-95-2	4.14E-04	7.19E-03	1.27	NO
Styrene	100-42-5	7.54E-04	3.65E-02	6.67	NO
Toluene	108-88-3	2.31E-01	1.10E+01	25	NO
Xylenes	1330-20-7	9.21E-02	4.24E+00	29	NO
Dichlorobenzene	25321-22-6	2.20E-05	--	20	--
Formaldehyde	50-00-0	1.38E-03	--	5.10E-04	--
Nitrous Oxide	10024-97-2	5.62E-03	--	6	--
Arsenic	7440-38-2	3.67E-06	--	1.5E-06	--
Beryllium	7440-41-7	2.20E-07	--	2.8E-05	--
Cadmium	7440-43-9	2.02E-05	--	3.7E-06	--
Chromium	7440-47-3	2.57E-05	--	0.033	--
Cobalt	7440-48-4	1.54E-06	--	0.0033	--
Manganese	7439-96-5	6.98E-06	--	0.067	--
Mercury	7439-97-6	4.78E-06	--	--	--
Nickel	7440-02-0	3.86E-05	--	2.7E-05	--
Selenium	7782-49-2	4.41E-07	--	0.013	--
7-PAH		2.09E-07	--	2.0E-06	--
Benz(a)anthracene	56-55-3	3.31E-08	--	--	--
Benzo(a)pyrene	50-32-8	2.20E-08	--	2.00E-06	--
Benzo(b)fluoranthene	205-99-2	3.31E-08	--	--	--
Benzo(k)fluoranthene	205-82-3	3.31E-08	--	--	--
Dibenzo(a,h)anthracene	53-70-3	2.20E-08	--	--	--
Chrysene	218-01-9	3.31E-08	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	3.31E-08	--	--	--
Other PAH		1.41E-06	--	9.1E-05	--
2-Methylnaphthalene	91-57-6	4.41E-07	--	--	--
7,12-Dimethylbenz(a)anthra	57-97-6	2.94E-07	--	--	--
Benzo(g,h,i)perylene	191-24-2	2.20E-08	--	--	--
3-Methylcholanthrene	56-49-5	3.31E-08	--	2.50E-06	--
Acenaphthene	83-32-9	3.31E-08	--	--	--
Acenaphthylene	203-96-8	3.31E-08	--	--	--
Anthracene	120-12-7	4.41E-08	--	--	--
Fluoranthene	206-44-0	5.51E-08	--	--	--
Fluorene	86-73-7	5.14E-08	--	--	--
Phenanathrene	85-01-8	3.12E-07	--	--	--
Pyrene	129-00-0	9.18E-08	--	--	--

[a] Product loading rack short-term emissions are calculated in Table C-16b.

[b] Short-term emissions from the VCU stack are computed in Tables C-15 and C-16a. The sum for each pollutant of emission rates in Tables C-15 and C-16a is presented here.

[c] Screening emission levels and Allowable Ambient Concentrations (AACs) are given in Sections 585 and 586 of IDAPA 58.01.01. The EL for naphthalene is set to the PAH EL an Cheryl Robinson, July 2, 2014. The compliance strategy taken for each TAP is as follows:

Benzene: Gasoline is the only petroleum product containing benzene emissions (diesel and jet products do not contain appreciable amounts of ben gasoline loading, and leaks from equipment in gasoline service are regulated under NESHAP Subpart BBBBBB. Therefore, emissions of be program per IDAPA 58.01.01.210.20.

Naphthalene: Naphthalene is emitted from tank modifications, the product loading rack, the VCU, and leaks from new equipment components. The unc EL for naphthalene when treated as a PAH, but the uncontrolled emission rate does not exceed the screening EL for naphthalene as a non- naphthalene is to demonstrate that the controlled ambient concentration of naphthalene impacts from the PTC project are less than the A

All Other TAP: As shown in the "Uncontrolled TAP Emissions" column, the uncontrolled emission rate of the pollutant is below the screening EL promul Emissions" column is based on the sum of the preceding columns, except that in lieu of including VCU emissions, the product loading rack of 125 accounts for the fact that in current operation, emissions from the TAP are captured according to the capture efficiency below. Th factor greater than the factor calculated below is representative of the loading rack's completely uncontrolled emissions.

Capture Eff.	99.2%	
Uncaptured:	0.8%	= 100% - Capture Eff., %

Short-Term Emissions with VCU Exceeding Screening Level? (Y/N)	Acceptable Ambient Concentration [c] (µg/m^3)
NO	
NO	
YES	0.12 - See Footnote
NO	
NO	
NO	
NO	
NO	
NO	
YES	0.014
NO	
NO	
NO	
NO	
NO	
NO	
YES	7.70E-02
NO	
YES	2.30E-04
NO	
YES	5.60E-04
NO	
NO	
NO	
--	
YES	4.20E-03
NO	
NO	
--	
NO	
--	
--	
--	
--	
--	
NO	
--	
--	
--	
NO	
--	
--	
--	
--	
--	
--	
--	

ıd annual averaging period, based on correspondence with

:zene). Benzene emissions from gasoline storage tanks, ɛnzene are deemed to be in compliance with the TAP

:ontrolled emission rate of naphthalene exceeds the screening -carcinogenic TAP. The compliance strategy taken for AAC established for naphthalene.

gated by IDEQ for the TAP species. The "Uncontrolled TAP ‹ emissions are scaled upward by a factor of 125. This factor erefore, scaling the loading rack's current emissions by a

Min. Scaling Fctr:	125	= 100% / Uncaptured, %

Min. Scaling Fctr:	125	= 100% / Uncaptured, %

Table C-17c. Criteria Pollutant Modeling Threshold Comparisons

Pollutant	Annual VCU Emissions [a] (tpy)	Level I Threshold [a] (tpy)	Meets Threshold?	Annual NG Combustion Emissions [a] (tpy)	Total Criteria Pollutant Emissions (tpy)
NO_X	3.23	1.20	Exceeding	0.05	3.28
CO	1.81	--	--	0.04	1.85
Pollutant	**Annual VCU Emissions [a] (tpy)**	**BRC Threshold [c] (tpy)**	**Meets Threshold?**		
PM_{10}	0.17	2.50	BRC		
$PM_{2.5}$	0.17	1.50	BRC		
SO_2	0.02	4.00	BRC		
Pollutant	**Short-Term VCU Emissions [b] (lb/hr)**	**Level I Threshold [a] (lb/hr)**	**Meets Threshold?**	**Short-Term NG Combustion Emissions [b] (lb/hr)**	**Total Criteria Pollutant Emissions (lb/hr)**
NO_X	8.99	0.20	Exceeding	0.01	9.00
CO	5.03	15.00	Meets Level I	0.01	5.04

a Total annual potential emissions from the VCU are provided in Tables C-7 and C-13. Loading rack emissions VOC are calculated using the emission factor shown in Table C-7a, while emissions of CO, NO_x, PM, and SO_2 are estimated in Table C-7b. Criteria pollutant emissions from natural gas combustion at the comfort heater are calculated in Table C-13. (Emissions from the comfort heater are calculated at PTE for both hourly and annual emissions, so hourly emission rates convert exactly to annual emission rates.) Annual Level I thresholds from IDEQ modeling guidance are used to determine whether each pollutant requires a modeling demonstration.

b Total short-term potential emissions of criteria pollutants are calculated in Tables C-13 and C-14d. The basis for short-term emissions is the maximum short-term throughput of the loading rack, rather than the maximum annual throughput proposed in the PTC application.

c Pollutants that are Below Regulatory Concern (BRC) are within the Category I PTC exemption for IDEQ review, and these pollutants are not treated as subject to PTC review or PTC modeling review. Per IDAPA 58.01.01.221.01, a source is BRC if "the maximum capacity of a source to emit an air pollutant under its physical and operational design considering limitations on emissions such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed shall be less than ten percent (10%) of the significant emission rates set out in the definition of significant at Section 006."

Table C-17d. Criteria Pollutant Modeling Emission Rates for NO_X

Emission Source	Heat Rate (Btu/hr)	Annual Emissions [a] (tpy)	(g/s)	Short-Term Emissions [b] (lb/hr)	(g/s)
VCU	--	3.23	9.299E-02	8.99	1.133E+00
Heater #1	105,000	0.05	1.297E-03	0.01	1.297E-03
Total		**3.28**	**9.428E-02**	**9.00**	**1.134E+00**

a Emissions provided in Table C-17c above (total criteria pollutant emissions). Conversions to g/s assume 8,760 operating hours/yr.

b Emissions provided in Table C-17c above.

Table C-17e. TAP Modeling Emission Rates for Heaters

Emission Source	Heat Rate (Btu/hr)	Benzene Annual Emissions [a] (tpy)	(g/s)	Naphthalene Annual Emissions [a] (tpy)	(g/s)
VCU	--	8.79E-04	2.530E-05	6.52E-05	1.875E-06
Heater #1	105,000	9.47E-07	2.724E-08	2.75E-07	7.912E-09
Total		**8.80E-04**	**2.53E-05**	**6.55E-05**	**1.88E-06**
Emission Source		**Formaldehyde Annual Emissions [a] (tpy)**	**(g/s)**	**Arsenic Annual Emissions [a] (tpy)**	**(g/s)**
VCU		4.93E-04	1.417E-05	1.31E-06	3.778E-08
Heater #1		3.38E-05	9.728E-07	9.02E-08	2.594E-09
Total		**5.26E-04**	**1.51E-05**	**1.40E-06**	**4.04E-08**
Emission Source		**Cadmium Annual Emissions [a] (tpy)**	**(g/s)**	**Nickel Annual Emissions [a] (tpy)**	**(g/s)**
VCU		7.22E-06	2.078E-07	1.38E-05	3.967E-07
Heater #1		4.96E-07	1.427E-08	9.47E-07	2.724E-08
Total		**7.72E-06**	**2.22E-07**	**1.47E-05**	**4.24E-07**

a Emissions provided in Table C-13. Conversions to g/s assume 8,760 operating hours/yr. Emissions include both the VCU and the small contributions from other sources.

Table E-1a. Modeled Point Source Parameters for VCU

Point Sources	Description	Source	UTM East [a] (m)	UTM North [a] (m)	Elevation [b] (m)	Release Height [c] (m)	Release Temp [d] (K)
VCU	Stack Emissions from VCU	POINT	374718	4752779	1350.93	10.67	592.59

[a] Coordinates for point source are given in UTM Zone 12 with NAD 1983 projection. Coordinates were established using aerial imagery and attached plot plans of the facility.

[b] Source elevations based on output from EPA's AERMAP elevation software, version 11103. AERMAP computed these elevations based on seamless NED data covering the area around the site. Data obtained from the United States

[c] Release height and stack diameter based on measurements at the Pocatello site.

[d] Online temperature data is not recorded from this stack. The temperature estimate is based on a source test (November 9, 2001) for the VCU.

607 °F

[e] Stack exit velocity calculated using stoichiometric combustion calculations. See Tables B-3a through B-3c for details.

[f] Modeled sources are representative of emissions in Table C-17a.

[g] Combustion byproducts include formaldehyde, arsenic, cadmium, and nickel. The emission rates of these pollutants are proportional, so they are modeled assuming a nominal emission rate of 1 g/s for the VCU. Model results are s

Table E-1b. Modeled Product Loading Sources

Volume Sources	Description	Source	UTM East [a] (m)	UTM North [a] (m)	Elevation [b] (m)	Release Height [c] (m)	Initial Lateral Dimension [c] (m)
Loading Rack	Center of Loading Rack	-	374836	4752748	-	-	-
BAY1_1	Fugitive Emissions from Loading Rack	VOLUME	374838	4752760	1350.15	1.63	1.13
BAY1_2	Fugitive Emissions from Loading Rack	VOLUME	374836	4752760	1350.17	1.63	1.13
BAY1_3	Fugitive Emissions from Loading Rack	VOLUME	374834	4752760	1350.19	1.63	1.13
BAY2_1	Fugitive Emissions from Loading Rack	VOLUME	374838	4752750	1350.26	1.63	1.13
BAY2_2	Fugitive Emissions from Loading Rack	VOLUME	374836	4752750	1350.28	1.63	1.13
BAY2_3	Fugitive Emissions from Loading Rack	VOLUME	374834	4752750	1350.31	1.63	1.13
BAY3_1	Fugitive Emissions from Loading Rack	VOLUME	374838	4752740	1350.41	1.63	1.13
BAY3_2	Fugitive Emissions from Loading Rack	VOLUME	374836	4752740	1350.41	1.63	1.13
BAY3_3	Fugitive Emissions from Loading Rack	VOLUME	374834	4752740	1350.42	1.63	1.13
BAYT_1	Fugitive Emissions from Transmix Bay	VOLUME	374838	4752732	1350.49	1.63	1.13
BAYT_2	Fugitive Emissions from Transmix Bay	VOLUME	374836	4752732	1350.49	1.63	1.13
BAYT_3	Fugitive Emissions from Transmix Bay	VOLUME	374834	4752732	1350.5	1.63	1.13

[a] Coordinates for the loading rack are given in UTM Zone 12 with NAD 1983 projection. The coordinates in the first row are the center of the rack, in the middle bay. Coordinates were established using aerial imagery and attached p sources are based on the three product loading bays and the single transmix loading / ethanol offloading bay at the loading rack. Based on the plot plans and aerial imagery, the centerlines of each bay are 10 m apart. The bays run is 31 ft south. With regard to the number and spacing of volume sources: each tank truck is approximately 8.0 feet wide. This width is used to define volume source spacing as described in EPA's AERMOD user guide, Table 3-1, an to this figure, each volume source is to be spaced 8.0 feet apart. Each truck is approximately 23 ft long. 23 ft / 8.0 ft = 2.875, so three volume sources are used to represent each bay. The volume sources are located with reference t one located on the centerline, and one 8 ft east of the centerline for each bay.

Length of truck + trailer:	7.01	m	=	23.0	ft
Width of truck:	2.44	m	=	8.0	ft
Number of volume sources per bay:	3				
Height of truck:	3.25	m	=	10.67	ft
Volume source release height:	1.6	m	=	5.3	ft

[b] Source elevations based on output from EPA's AERMAP elevation software, version 11103. AERMAP computed these elevations based on seamless NED data covering the area around the site. Data obtained from the United States

[c] Volume source initial vertical dimensions are based on the estimated height of a gasoline tank truck. The tank truck height is set to 3.25 meters, and the central release height is taken to be the middle of the truck. Volume source in as described in footnote a, for adjacent volume sources forming a line source, in accordance with the State of Idaho Modeling Guideline. Each volume source in the adjacent sources is identical.

[d] Emission rates of each species are calculated by equally apportioning the loading rack emissions.

Table E-1c. Modeled Furnace Source

Volume Sources	Description	Source	UTM East [a] (m)	UTM North [a] (m)	Elevation [b] (m)	Release Height [c] (m)	Release Temp [d] (K)
FURN	Comfort heater (natural gas)	POINT	374745	4752746	1351.34	4.27	0

[a] Coordinates for the furnace stack source are given in UTM Zone 12 with NAD 1983 projection.

[b] Source elevations based on output from EPA's AERMAP elevation software, version 11103. AERMAP computed these elevations based on seamless NED data covering the area around the site.

[c] Release height and stack diameter based on on-site measurements (November 12, 2015).

[d] Release temperature not specified in the heater specifications, so a conservative ambient temperature setting is used. This temperature setting is represented with a "0" in the input file for EPA's AERMOD model.

[e] Velocity for the furnace is calculated below:

Heater Capacity	0.105	MMBtu/hr
Exhaust Factor	10,610	wscf/MMBtu (EPA Method 19)
Exhaust Gas	1,114	wscf/hr
	31.55	scm/hr
Stack Diameter	0.076	m
Stack Cross-Sectional Area	0.0046	sq. m
Stack Exit Velocity	1.92	m/s

[f] Combustion byproducts include formaldehyde, arsenic, cadmium, and nickel. The emission rates of these pollutants are proportional, so they are modeled assuming a nominal emission rate of 1 g/s for the VCU. The modeled furna based on the emission rates of each pollutant.

Table E-1d. Coordinates Used to Obtain Elevation Data

Location	UTM East [a] (m)	UTM North [a] (m)	Longitude	Latitude
Center of Facility	374809.5	4752788	-112.53386	42.91744
Point NE of Center	394809.5	4772788	-112.29265	43.10052
Point SW of Center	354809.5	4732788	-112.77364	42.73388

[a] Coordinates for the facility given in UTM Zone 12 with NAD 1983 projection. A terrain data range of +/- 10 km from the facility center is used.

Velocity [e] (m/s)	Diameter [c] (m)	NO_x Emissions (g/s) Short-Term	NO_x Emissions (g/s) Annual	Modeled Annual Emissions [f] Naphthalene (g/s)	Modeled Annual Emissions [f] Benzene (g/s)	Modeled Annual Emissions [f] Combustion Byproducts [g] (g/s)
2.28	2.44	1.133E+00	9.299E-02	1.875E-06	2.530E-05	1.000E+00

Geological Survey via the MRLC Consortium seamless server.

scaled based on the emission rates of each pollutant.

Initial Vertical Dimension [c] (m)	Modeled Annual Emissions [d] Benzene (g/s)	Modeled Annual Emissions [d] Naphthalene (g/s)
-	0.000E+00	4.971E-07
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	0.000E+00	5.524E-08
1.51	8.268E-07	7.471E-10
1.51	8.268E-07	7.471E-10
1.51	8.268E-07	7.471E-10

plot plans of the facility. Coordinates of the individual volume
east to west. Therefore, Bay 1 is 31 ft north of Bay 2, and Bay 3
d EPA's 1995 ISCST3 model user guide, Figure 1-8a. According
to the center of the loading rack: one 8 ft west of the centerline,

Geological Survey via the MRLC Consortium seamless server,

nitial lateral dimension is calculated as the truck width / 2.15,

				Modeled Annual Emissions		
Velocity [e] (m/s)	Diameter [c] (m)	NO_x Emissions (g/s) Short-Term	Annual	Benzene (g/s)	Naphthalene (g/s)	Combustion Byproducts [f] (g/s)
1.92	7.62E-02	1.297E-03	1.297E-03	2.724E-08	7.912E-09	6.865E-02

ace nominal emission rate is calculated by dividing the pollutant-specific furnace emission rate by the VCU emission rate. Model results are scaled

Table E-2. Coordinates of Property Fenceline

Location	UTM East [a] (m)	UTM North [a] (m)
NW Corner	374667	4752886
NE Corner	374959	4752880
Point 1	374956	4752709
Point 2	374935	4752710
Point 3	374919	4752699
Point 4	374784	4752703
Point 5	374780	4752714
Point 6	374752	4752715
Point 7	374751	4752696
Point 8	374727	4752697
Point 9	374703	4752708
Point 10	374686	4752724
Point 11	374674	4752744
Point 12	374668	4752763
Point 13	374665	4752785

[a] Coordinates for the facility given in UTM Zone 12 with NAD 1983 projection. Coordinates were established using aerial imagery and attached plot plans of the facility.

Table E-3a. Vertical Tank Coordinates and Dimensions

Building Name	Center UTM East [a] (m)	Center UTM North [a] (m)	Shell Height (ft)	Diameter (ft)	Diameter (m)	Radius (ft)
TANK901	374772	4752814	39.34	42.53	12.96	21.26
TANK902	374796	4752813	39.65	42.55	12.97	21.27
TANK903	374819	4752812	39.40	42.54	12.97	21.27
TANK904	374772	4752838	40.02	42.50	12.95	21.25
TANK905	374797	4752838	39.20	42.51	12.96	21.25
TANK906	374820	4752837	39.37	42.52	12.96	21.26
TANK907	374797	4752862	39.57	42.53	12.96	21.27
TANK908	374821	4752862	39.38	42.51	12.96	21.25
TANK909	374855	4752812	48.01	39.99	12.19	20.00
TANK910	374880	4752812	48.00	39.98	12.19	19.99
TANK911	374903	4752810	47.62	56.53	17.23	28.27
TANK912	374856	4752837	48.02	39.98	12.19	19.99
TANK913	374880	4752836	48.00	39.98	12.19	19.99
TANK914	374904	4752835	47.82	48.04	14.64	24.02
TANK915	374881	4752861	47.47	40.02	12.20	20.01
TANK916	374905	4752860	47.43	52.52	16.01	26.26
TANK917	374773	4752863	39.71	60.09	18.31	30.04
TANK918	374856	4752861	47.52	56.53	17.23	28.27
TANK919	374729	4752864	40.00	60.07	18.31	30.04
TANK920	374699	4752865	39.45	60.08	18.31	30.04
TANK921	374743	4752829	47.92	90.02	27.44	45.01
TANK922	374699	4752829	47.99	90.01	27.43	45.00
TANK930	374854	4752788	24.00	21.24	6.47	10.62
TANKA100	374873	4752789	16.00	15.00	4.57	7.50

[a] Coordinates for the facility given in UTM Zone 12 with NAD 1983 projection. Coordinates were established using aerial imagery and attached plot plans of the facility.

Table E-3b. Horizontal Tank Coordinates and Dimensions

Building Name	NE Corner UTM East [a] (m)	NE Corner UTM North [a] (m)	Height (ft)	X Length (ft)	Y Length (ft)	Angle
TANKA101	374869	4752774	8.00	8.00	16.00	180
TANKA102	374875	4752774	6.00	6.00	19.00	180
TANKA105	374888	4752772	5.30	5.30	12.00	180
TANKA107	374894	4752772	3.79	3.79	12.00	180
TANKA108	374899	4752775	7.75	7.75	22.00	180
TANKA110	374903	4752773	7.50	7.50	12.00	180
TANKA112	374880	4752774	8.00	8.00	17.42	180
TANKA113	374884	4752774	7.50	7.50	22.00	180
TANKA114	374865	4752773	8.00	8.00	6.00	180

[a] Coordinates for the facility given in UTM Zone 12 with NAD 1983 projection. Coordinates were established using aerial imagery and attached plot plans of the facility.

Table E-3c. Building Coordinates and Dimensions

Building Name	NE Corner UTM East [a] (m)	NE Corner UTM North [a] (m)	Height (ft)	X Length (ft)	Y Length (ft)	Angle
LDRACK	374855	4752765	22	120	122	180
CANOPY	374840	4752728	22	39	22	180
MCC	374799	4752785	10	35	44	180
OFFICE	374751	4752754	14	61	76	180

[a] Coordinates for the facility given in UTM Zone 12 with NAD 1983 projection. Coordinates were established using aerial imagery and attached plot plans of the facility.

Table E-4a. Gasoline Hydrocarbon Vapor Speciation

Species	Mole Percent of Species (%) [1]	Number of Carbon Atoms per Molecule	Number of Hydrogen Atoms per Molecule
Air	58.10%		
Propane	0.60%	3	8
Isobutane	2.90%	4	10
Butene	3.20%	4	8
N-Butane	17.40%	4	10
Isopentane	7.70%	5	12
Pentene	5.10%	5	10
N-Pentane	2.00%	5	12
Hexane	3.00%	6	14
Average Chain Length	--	4.48	10.57

1 EPA-450/2-77-026, "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals", Table 2-2 (October, 1977).

Table E-4b. Stoichiometric Combustion Ratios

Ratio of CO_2 Emitted to Hydrocarbons Combusted (scf/scf) [1]	Ratio of H_2O Emitted to Hydrocarbons Combusted (scf/scf) [1]	Ratio of O_2 Combusted to Hydrocarbons Combusted (scf/scf) [1]
4.48	5.28	7.12

1 Stoichiometric ratios are calculated based on the following combustion formula:
C_AH_B + (A+B/4)O2 --> ACO_2 + (B/2)H_2O,
where A and B represent the average chain length for gasoline, calculated in Table B-3a.

Table E-4c. Exhaust Velocity Calculated using Stoichiometric Combustion

Total Exhaust Flow Rate (scfh) [1]	Flow Rate (acfm) [2]	Flow Rate (m^3/s)	Stack Velocity (m/s)
670,760.68	22,598.73	10.67	2.28

1 Exhaust flow rate calculated using the following parameters and the stoichiometric combustion ratios presented in Table B-3b:

12,175	scfh min. dilution air at 60% vol% hydrocarbon
610,336	scfh makeup air from louvers, assumes 0% excess oxygen.
18,263	scfh hydrocarbon flow to VCU, max load rack condition.
130,105	scfh O_2 consumed.
96,500	scfh exhaust water vapor.
81,855	scfh exhaust CO_2.
4.67	m^2 stack area.

2 Actual flow rate (acfm) is calculated using the temperature below, which is based on a source test for the VCU.

1,067	°R exhaust temp.
528	°R standard temp.
511	°R ambient temp.

TANK	Shell Height	Shell Dia.	NORMAL GUAGE	WORKING BBLs	Service
901	39.341 ft	42.526 ft	9,010.18	8,799.80	Diesel Fuel
902	39.650 ft	42.548 ft	8,392.02	7,724.85	Transmix
903	39.400 ft	42.542 ft	9,170.99	9,065.63	Diesel Fuel
904	40 ft 0 1/4 in	42 ft 6 in	9,656.94	8,311.02	Out of service
905	39.200 ft	42.506 ft	9,202.77	8,971.15	Diesel Fuel
906	39.370 ft	42.521 ft	9,238.70	9,028.07	Diesel Fuel
907	39.570 ft	42.534 ft	8,781.85	8,592.22	Diesel Fuel
908	39.380 ft	42.508 ft	8,844.23	8,633.85	Diesel Fuel
909	48 ft 0 1/8 in	39.99 ft	9,141.00	9,001.00	Out of service
910	48 ft 0 in	39.98 ft	10,419.97	8,987.51	Out of service
911	47.620 ft	56.532 ft	19,197.26	18,974.17	Diesel Fuel
912	48 ft 0 1/4 in	39.98 ft	9,141.00	8,946.00	Out of service
913	48 ft 0 in	39.98 ft	9,137.00	8,972.00	Out of service
914	47.820 ft	48.036 ft	13,995.66	13,511.00	Gasoline
915	47.470 ft	40.020 ft	8,957.66	8,733.90	Gasoline
916	47.430 ft	52.518 ft	16,439.11	16,181.83	Ethanol
917	39.710 ft	60.087 ft	18,902.55	18,650.68	Diesel Fuel
918	47.515 ft	56.534 ft	19,438.89	19,215.52	Diesel Fuel
919	40.000 ft	60.073 ft	18,445.36	18,193.10	Gasoline
920	39.450 ft	60.078 ft	17,952.78	17,742.67	Gasoline
921	47.920 ft	90.017 ft	47,420.15	46,475.43	Gasoline
922	47.990 ft	90.006 ft	47,343.94	46,115.64	Gasoline
930	24.000 ft	21.24 ft	1,294.00	859.00	Out of service
A107	Length 144 in.	dia. 45.5 in.	1,013.60	Gallons	Out of service
A108	Length 22 ft	dia. 7 ft 9 in.	7,762.80	Gallons	Generic additive
A111	Length 6 ft	dia. 3.75 ft	495.70	Gallons	Out of service
A112	Length 209 in.	dia. 96 inches	6,548.00	Gallons	ricity/anti-conduct
A113	22 ft	dia. 96 inches	7,896.25	Gallons	ricity/anti-conduct
A114	96 inches	72 inches	1,692.00	Gallons	Red Dye additive
A100					
A101					
A102					
A105					
A110					

Comments	Date of Construction	Kb?	Reasoning	
	1963	No	Date < 1973	
Tk 902 is also the mainline relief ta	1963	No	Date < 1973	
	1963	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963	No	Date < 1973	
	1963	No	Date < 1973	
	1963	No	Date < 1973	
	1963	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963 ???	No	Date < 1973	
	1963	No	Date < 1973	
	1963	No	Date < 1973	Questionab
	1963	No	Date < 1973	
	1969	No	Date < 1973	
	1994		Yes	
	1995		Yes	
	2002		Yes	
	2002		Yes	
Old transmix tank and mainline relie	1963 ???	No	Size < 75 m^3	
Owned by NWTC - old Cenex addit	????	No	Size < 75 m^3	
Owned by NWTC	1990	No	Size < 75 m^3	
Owned by NWTC - old red dye tank	????	No	Size < 75 m^3	
Owned by NWTC	Dec-04	No	Size < 75 m^3	
Owned by NWTC	Dec-04	No	Size < 75 m^3	
Owned by NWTC	Feb-07	No	Size < 75 m^3	
	1963	No	Date < 1973	
	1963	No	Size < 75 m^3	
	1990	No	Size < 75 m^3	
	1990	No	Size < 75 m^3	
	1995	No	Size < 75 m^3	

	8800
	7722
	9066
	8971
	9028
	8592
	8967
	18974
	13511
	9004
ɔle whether the tank is a "gasoline storage tank" under Subpart R.	15941
	19007
	19216
	18193
	17743
	46430
	46299
	7500
	6500
	7800
	1600
	21000
	6000
	4000
	2000
	4000

-2.33%
-7.98%
-1.14%

-2.52%
-2.28%
-2.16%
1.39%

-1.16%

-3.46%
0.52%
-3.03%
0.55%
-1.15%
-1.37%
-1.17%
-2.09%
-2.21%

-3.39%

-0.73%
-1.22%
-5.44%

M E M O R A N D U M

DATE: November 15, 2016

TO: Craig Woodruff, Permit Writer, Air Program

FROM: Darrin Mehr, Analyst, Air Program

PROJECT: P-2016.0020 PROJ 61700 – Permit to Construct (PTC) Application for Tesoro Logistics Operations, LLC for the Tier II Operating Permit Conversion to a PTC and Permitting of the Previously-Installed Vapor Combustion Unit Project at the Existing Facility Near Pocatello, Idaho

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a Non-Carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
ACFM	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ARM	Ambient Ratio Method
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
Btu/hr	British Thermal Units per hour
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
gal/yr	Gallons per Year
GEP	Good Engineering Practice
gpm	Gallons per Minute
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
m	Meters
m/s	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NWS	National Weather Service
O_3	Ozone
Pb	Lead
PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	Parts Per Billion
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
SIL	Significant Impact Level
SO_2	Sulfur Dioxide

TAP	Toxic Air Pollutant
TLO	Tesoro Logistics Operations, LLC (permittee)
T/yr	tons per year
Trinity	Trinity Consultants (project permitting consultant)
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VCU	Vapor Control Unit
VOCs	Volatile Organic Compounds
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

1.1 General Project Summary

On April 15, 2016, Tesoro Logistics Operations, LLC (TLO) submitted an application for Permit to Construct (PTC) for the conversion of the expired facility-wide Tier II Operating Permit to a PTC and a PTC for the historical installation of a vapor control unit (VCU) enclosed thermal oxidation device, operated to control VOCs and TAPs/HAPs collected from the facility's product loading rack. There are no other modifications to this existing facility for this project.

On October 6, 2016, TLO submitted a revised modeling report, presenting the ambient air impact analyses that support issuance of the PTC. The revisions accounted for increased pollutant emissions associated with a revision in estimated potential to emit (PTE), resulting from increased potential gasoline throughput. Emissions rates for NOx were altered and additional natural gas combustion TAPs for the VCU pilot flame and the small comfort heater at the site were added to the emissions inventory and the ambient air impact analyses. The volumetric flow rate for the VCU was altered to more accurately reflect the quantity of combustibles over the time period.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 and 203.03 [Idaho Air Rules Section 203.02 and 203.03]). Trinity Consultants (Trinity), TLO's permitting and modeling consultant, submitted analyses and applicable information and data to enable DEQ to evaluate potential impacts to ambient air.

Trinity performed project-specific air quality impact analyses to demonstrate compliance for facility-wide allowable emissions with air quality standards. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the facility as modified will not cause or significantly contribute to a violation of the applicable air quality standards. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This modeling review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the DEQ Statement of Basis.

The submitted air quality impact analyses: 1) utilized appropriate methods and models according to established DEQ/EPA rules, policies, guidance, and procedures; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the facility as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from applicable emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project do not result in increased emissions and modeling was not required to demonstrate compliance with any TAPs increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
Vapor Control Unit and Loading Rack The Vapor Control Unit (VCU) and a small natural gas-fired comfort heater are the only sources of NOx emissions. NOx emissions of 9.0 lb/hr and 3.2 tons per year were modeled for the loading rack's VCU. Compliance with the 1-hr NO_2 NAAQS was demonstrated by a wide margin based on the emission source impacts and DEQ-approved ambient background concentration. This project's facility-wide ambient impacts plus background were 62% of the allowable 1-hour NO_2 NAAQS. Annual average NO_2 impacts were one half of the annual NO_2 SIL so an annual NO_2 cumulative NAAQS compliance demonstration was not required.	NOx and TAPs emissions from the loading rack with the VCU capture and emission control system were based on the following assumptions: • 5,500 gallons per minute (gpm) and 370,800,990 gallons per year (gal/yr) of gasoline throughput; • 3,300 gpm and 191,453,010 gal/yr of diesel fuel throughput; and, • 550 gpm and 2,520,000 gal/yr of transmix throughput.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department, using DEQ/EPA established guidance, policies, and procedures, that operation of the proposed facility or modification will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

1.2 Summary of Submittals and Actions

February 26, 2016: DEQ received a modeling protocol from Trinity on behalf of TLO via email.

March 18, 2016: DEQ issued a modeling protocol approval letter with comments to Trinity via email.

April 15, 2016: TLO submitted a PTC application for the Pocatello terminal to convert an expired Tier II operating permit to a PTC and obtain a PTC for the existing vapor control unit at the facility.

May 12, 2016: DEQ declared the application complete.

July 11, 2016: DEQ issued the facility draft PTC package to TLO.

October 6, 2016: DEQ received a revised permit application and modeling report based on increased gasoline throughput capacity at the loading rack.

October 24, 2016: DEQ received electronic modeling files supporting the revised ambient impact analyses.

2.0 Background Information

2.1 Permit Requirements for Permits to Construct

PTCs are issued to authorize the construction of a new source or modification of an existing source or permit. Idaho Air Rules Section 203.02 requires that emissions from the new source or modification not cause or significantly contribute to a violation of an air quality standard, and Idaho Air Rules Section 203.03 requires that emissions from a new source or modification comply with applicable toxic air pollutant (TAP) increments of Idaho Air Rules Sections 585 and 586.

2.2 Project Location and Area Classification

The facility is located near Pocatello, Idaho, in Bannock County. The area is designated as attainment or unclassifiable for all pollutants. The area operates under the Portneuf Valley limited PM_{10} maintenance plan.

2.3 Modeling Applicability for Criteria Pollutants

2.3.1 Below Regulatory Concern and DEQ Modeling Guideline Level I and II Thresholds

Idaho Air Rules Section 203.02 state that a PTC cannot be issued unless the application demonstrates to the satisfaction of DEQ that the new source or modification will not cause or significantly contribute to a NAAQS violation. Atmospheric dispersion modeling is used to evaluate the potential impact of a proposed project to ambient air and demonstrate NAAQS compliance. However, if the emissions associated with a project are very small, project-specific modeling analyses may not be necessary. If the emissions increases associated with a project are below modeling applicability thresholds established in the *Idaho Air Modeling Guideline* ("State of Idaho Guideline for Performing Air Quality Impact Analyses"), available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf, then a project-specific analysis is not required. Modeling applicability emissions thresholds were developed by DEQ based on modeling of a hypothetical source and were designed to reasonably ensure that impacts are below the applicable SIL. DEQ has established two threshold levels: Level 1 thresholds are unconditional thresholds, requiring no approval for use by DEQ; Level 2 thresholds are conditional upon DEQ approval, which depends on evaluation of the project and the site, including emissions quantities, stack parameters, number of sources emissions are distributed amongst, distance between the sources and the ambient air boundary, and the presence of sensitive receptors near the ambient air boundary.

Certain pollutants were exempted from the requirement to demonstrate compliance with NAAQS per Idaho Air Rules Section 203.02. If project-wide potential to emit (PTE) values for criteria pollutants would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more criteria pollutants exceeding the BRC threshold of 10 percent of emissions defined by Idaho Air Rules as significant, then a NAAQS compliance demonstration may not be required for those pollutants. BRC permit exemptions are based solely upon annual emission rates. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules Section 221 is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant.[1]" The interpretation policy also states that the exemption criteria of uncontrolled PTE not to exceed 100 tons per year (T/yr) (Idaho Air Rules

Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 T/yr, thereby negating the need to maintain calculated uncontrolled PTE under 100 T/yr. Table 2 presents the BRC modeling applicability for this project.

Table 2. CRITERIA POLLUTANT NAAQS COMPLIANCE DEMONSTRATION APPLICABILITY

Criteria Pollutant	Below Regulatory Concern Level (ton/year)	Applicable Facility-Wide Potential Emissions (ton/year)	NAAQS Compliance Exempted per BRC Policy?
PM_{10}[a]	1.5	0.17	Yes
$PM_{2.5}$[b]	1.0	0.17	Yes
Carbon Monoxide (CO)	10.0	1.8	Yes
Sulfur Dioxide (SO_2)	4.0	0.02	Yes
Nitrogen Oxides (NOx)	4.0	3.3	Yes
Lead (Pb)	0.06	3.5E-06	Yes
Ozone as VOC or NOx	4.0	48.2 T/yr VOCs	No

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Emissions of VOCs exceeded the BRC threshold of 4.0 T/yr. Level I modeling thresholds for emissions of VOCs for ozone formation do not exist. Modeling applicability for emissions of VOCs is discussed in Section 2.3.2.

This project's emissions of NOx and CO emissions were reduced in the October 6, 2016 revised submittal. Based on the October 2016 submittal, the final requested potential emissions of NO_x, CO, $PM_{2.5}$, PM_{10}, SO_2, and lead are less than the BRC thresholds for this project. By DEQ regulatory interpretation policy, a NAAQS compliance demonstration is not required for these pollutants. Trinity elected to submit 1-hour average and annual average NO_2 SIL and NAAQS analyses for this project to conclusively show that operations comply with NAAQS.

2.3.2 Ozone Modeling Applicability

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NO_x, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*

The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."

Allowable emissions estimates of VOCs at 48 T/yr and NOx at 3.2 T/yr are well below the 100 T/yr threshold, and DEQ determined it was not appropriate or necessary to require a quantitative source specific O_3 impact analysis.

2.3.3 Secondary Particulate Formation Modeling Applicability

The impact from secondary particulate formation resulting from emissions of NOx, SO_2, and/or VOCs was assumed by DEQ to be negligible based on of the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM_{10} and $PM_{2.5}$ impacts would be anticipated.

2.4 Significant and Cumulative NAAQS Impact Analyses

If maximum modeled pollutant impacts to ambient air from emissions sources associated with a new facility or the emissions increase associated with a modification exceed the SILs of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis may also be required for permit revisions driven by compliance/enforcement actions, any correction of emissions limits or other operational parameters that may affect pollutant impacts to ambient air, or other cases where DEQ believes NAAQS may be threatened by the emissions associated with the facility or proposed project.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts, according to established DEQ/EPA guidance, policies, and procedures, from applicable facility-wide emissions and emissions from any nearby co-contributing sources. A DEQ-approved background concentration value is then added to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 3. Table 3 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 3. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.3	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	75 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years. The O_3 standard was revised (the notice was signed by the EPA Administrator on October 1, 2015) to 70 ppb. However, this standard will not be applicable for permitting purposes until it is incorporated by reference *sine die* into Idaho Air Rules.

If the cumulative NAAQS impact analysis shows a violation of the standard, the permit cannot be issued if the proposed project or facility has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. The facility or project does not have a significant contribution to a violation if impacts are below the SIL at all specific receptors showing violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is demonstrated if: a) specific applicable criteria pollutant emissions increases are at a level defined as Below Regulatory Concern (BRC), using the criteria established by DEQ regulatory interpretation[1]; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling applicable emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion. TAPs emissions were not modeled for the pollutants and sources that were determined to be regulated by one of these federal standards.

3.0 Analytical Methods and Data

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant's consultant, Trinity, to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

Trinity performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the facility, using established DEQ policies, guidance, and procedures. Results of the submitted analyses, in combination with DEQ's analyses, demonstrated compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 4 provides a brief description of parameters used in the air impact modeling analyses.

Table 4. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Pocatello, Idaho	The area is an attainment or unclassified area for all criteria pollutants. The area operates under the Portneuf Valley PM_{10} Maintenance Plan—a limited maintenance plan.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 15181.
Meteorological Data	Pocatello	2008-2012—See Section 3.3 of this memorandum. Surface data from the Pocatello airport and upper air data from Boise, Idaho.
Terrain	Considered	Receptor, building, and emissions source stack base elevations were determined using USGS 1/3 arc second National Elevation Dataset (NED) files based on the NAD83 datum. The facility is located within Zone 12.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility and numerous nearby structures.
Receptor Grid	**Criteria Air Pollutants**	
	Grid 1	10-meter spacing along the facility's ambient air boundary and in a 1,500-meter (x) by 1,500-meter (y) rectangular grid centered on the facility.
	Grid 2	25-meter spacing in a 2,000-meter (x) by 2,000-meter (y) rectangular grid centered on Grid 1.
	Grid 3	50-meter spacing in a 4,000-meter (x) by 4,000-meter (y) rectangular grid centered on Grid 2.
	Grid 4	100-meter spacing in a 16.0 kilometer (x) by 16.0 kilometer (y) square grid centered on Grid 3.
	Toxic Air Pollutants (Benzene and Naphthalene)	
	Grid 1	10-meter spacing along the facility's ambient air boundary and in a 1,500-meter (x) by 1,500-meter (y) rectangular grid centered on the facility. The combustion TAPs (arsenic, cadmium, formaldehyde, and nickel) were modeled with the criteria air pollutant grid which merely expanded the area of coverage.

3.1.2 Modeling Protocol

A modeling protocol was submitted to DEQ on February 26, 2016. DEQ issued a modeling protocol approval, with comments, on March 18, 2016. Project-specific air impact analyses were conducted using data and methods described in the modeling protocol and the *Idaho Air Modeling Guideline*[2].

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD Version 15181 was used by Trinity for the modeling analyses to evaluate impacts of the facility. This is the current version of this regulatory guideline model.

3.2 Background Concentrations

A background concentration tool was used to establish ambient background concentrations for this project. A beta version of the background concentration tool was developed by the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST) and provided through Washington State University (located at http://lar.wsu.edu/nw-AIRQUEST/lookup.html). The tool uses regional scale modeling of pollutants in Washington, Oregon, and Idaho, with modeling results adjusted according to available monitoring data. The background is added to the design value for each pollutant and averaging period. The representative ambient background concentration values for the TLO facility's location for this project are:

- 18 parts per billion (ppb) (equal to 33.9 µg/m^3)1-hr NO_2, and,
- 3.9 ppb (equal to 7.3 µg/m^3), annual NO_2,.

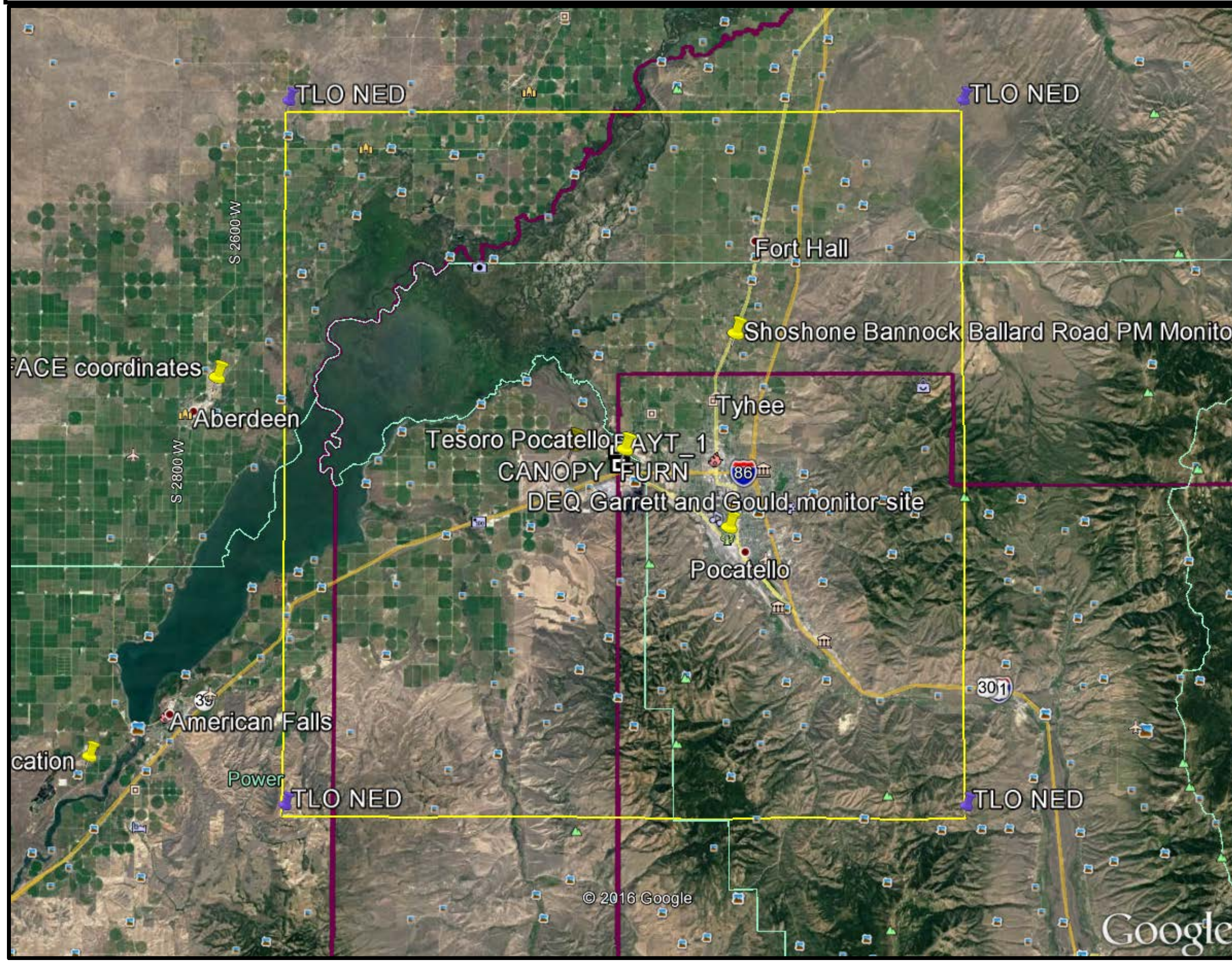
3.3 Meteorological Data

DEQ provided Trinity with a model-ready meteorological dataset processed from Pocatello surface and Boise upper air meteorological data covering the years 2008-2012. The model-ready dataset for this project was generated from monitored data collected at the Pocatello airport (FAA airport code KPIH) for surface and Automated Surface Observing System (ASOS) data. Upper air data was obtained from the National Weather Service (NWS) Station site in Boise (site code BOI). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. AERMINUTE version 11325 was used to process ASOS wind data for use in AERMET. AERMET Version 12345 was used to process surface and upper air data and generate a model-ready meteorological data input file. DEQ determined these data were representative for the TLO site and approved use of this dataset for the project, noting that the Pocatello airport is located approximately 2 miles west of the TLO site.

3.4 Terrain Effects

Trinity used a National Elevation Dataset (NED) file in GeoTiff format in the NAR-C (North American 1983 CONUS) datum, to calculate elevations of receptors. The model setup was presented in NAD83 coordinates. A 1/3 arc second file provided 10-meter resolution of elevation data. The terrain preprocessor AERMAP version 11103 was used to extract the elevations from the NED file and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. The project's NED file coverage is shown in Figure 1.

Figure 1. TESORO POCATELLO TERRAIN DATA FILE COVERAGE



3.5 Building Downwash Effects on Modeled Impacts

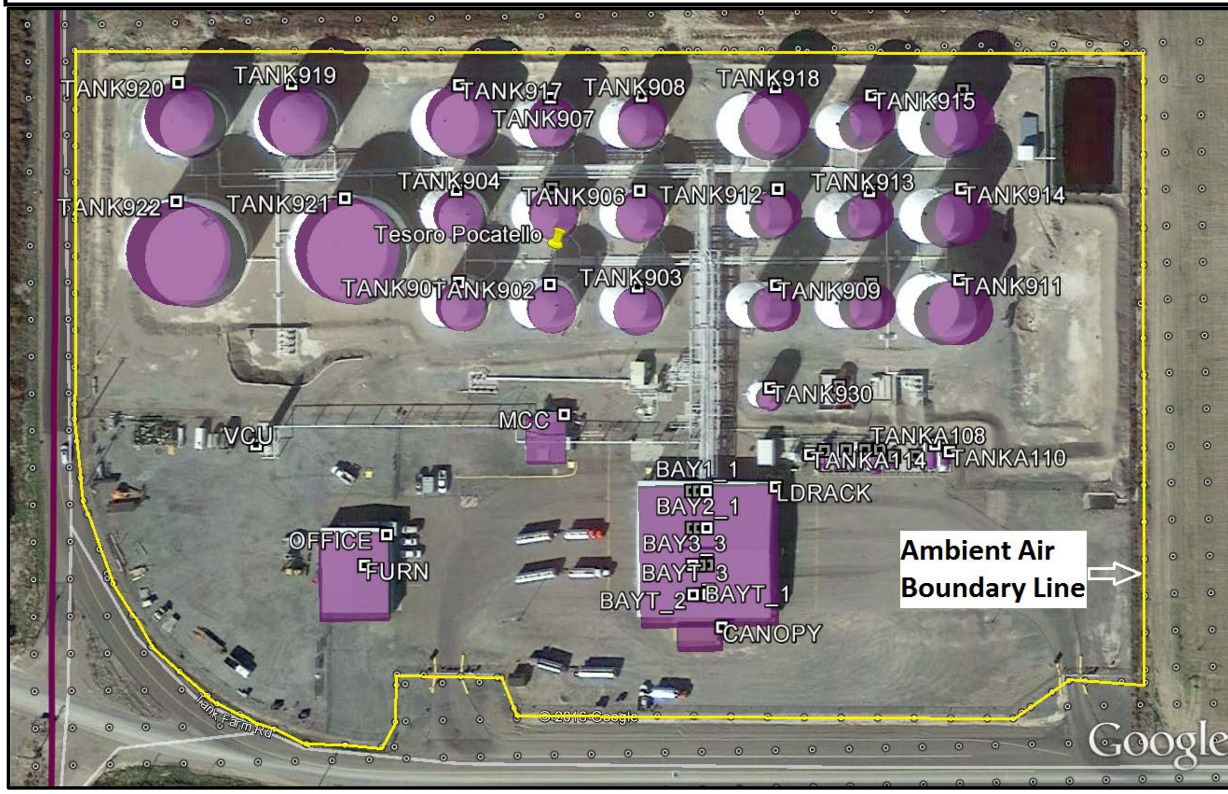
Potential downwash effects on the emissions plume were accounted for in the model by using building parameters as described by Trinity. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and release parameters for input to AERMOD. All modeled structures are depicted in Figure 2 of TLO's modeling report.

DEQ requested that documentation for the air impact analyses verify that all structures that could cause plume downwash be included in the impact assessment. EPA guidance has determined that emissions points within a distance equal to or less than five times the lesser of the building height or projected building width of the structure being examined could be subject to downwash caused by that structure. There were no nearby structures external to the TLO facility required to be included. The locations of the on-site structures appeared reasonably accurate when compared with the locations and dimensions represented in the Google earth® imagery. Building and tank dimensions were listed in Tables E-3a, E-3b, and E-3c of the project's supporting electronic spreadsheet submitted with the application. DEQ review concluded that the building downwash was appropriately evaluated.

3.6 Facility Layout

Figure 2 below shows the facility's emission sources and all structures in the air impact modeling analyses. The facility's structure locations and horizontal dimensions were adequately consistent with the web-based mapping program Google earth®. No new structures will be built as a result of this permitting action.

Figure 2. TESORO POCATELLO LAYOUT



3.7 Ambient Air Boundary

The ambient air boundary used for this project was established along the perimeter of the fence line. The entire perimeter is fenced and gated with complete control of the area, and therefore, all areas inside the fenced area were excluded from consideration as ambient air in the impact analyses. The innermost line of dots depicted in Figure 2 above show the ambient air boundary used in the impact analyses for this project. Figure 2 of TLO's modeling report also presents the facility's ambient air boundary. DEQ review concluded that the ambient air boundary employed in the final air impact analyses appropriately precluded public access based on the criteria described in DEQ's *Modeling Guideline*[2].

3.8 Receptor Network

Table 4 describes the receptor network used in the submitted modeling analyses. The receptor grids used for the modeling analyses provided adequate resolution of the maximum design concentrations for the project and extensive coverage. DEQ determined that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations.

3.9 Emission Rates

Review and approval of estimated emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emissions estimates is not addressed in this modeling memorandum. DEQ air impact analyses review included verification that the potential emissions rates provided in the emissions inventory were properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emissions rates used in the dispersion modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emissions rates must be equal to or greater than the facility's potential emissions calculated in the PTC emissions inventory or proposed permit allowable emissions rates.

3.9.1 Criteria Pollutant Emissions Rates for Significant Impact Level and Cumulative Analyses

A significant impact level (SIL) analysis was submitted as part of the NAAQS compliance demonstration. Emission rates for the SIL analyses and the cumulative impact analyses were identical. Cumulative NAAQS analyses were required for NOx emissions to demonstrate compliance with the 1-hour NO_2 NAAQS. Impacts of NO_2 were below the annual NO_2 SIL and a cumulative NAAQS analysis was not required. TLO elected to present an annual NO_2 NAAQS demonstration in the modeling report.

Table 5 lists criteria pollutant continuous (24 hours per day) emissions rates used to evaluate NAAQS compliance for both short-term and long-term standards. These modeled rates must be equal or greater than allowable facility-wide emissions for the listed averaging period.

Table 5. EMISSIONS RATES USED IN MODELING ANALYSES

Modeled Emissions Point	Description	NO_x[a] (lb/hr)[b]	
		1-Hour Average	Annual Average
VCU	Vapor Control Unit	9.0	0.74
FURN	Natural gas-fired Comfort Heater	0.010	0.010

a. Nitrogen oxides.
b. Pounds per hour.

3.9.2 Toxic Air Pollutant Emissions

The increase in emissions from the proposed project are required to demonstrate compliance with the toxic air pollutant (TAP) increments, with an ambient impact analyses required for any TAP having a requested potential emission rate that exceeds the screening emissions level (EL) specified by Idaho Air Rules Section 585 or 586.

This project had six TAPs with emission rates exceeding the carcinogenic screening emission rate limits (ELs) specified in Section 586 of the Idaho *Air Rules*.

Trinity modeled the hourly TAPs emission rates listed in Tables 6 and 7 for 8,760 hours per year.

Table 6. POINT SOURCE TOXIC AIR POLLUTANT EMISSIONS RATES			
Pollutant	CAS#[a]	Source	
		Vapor Control Unit (lb/hr)[b]	Comfort Heater (lb/hr)
Benzene	71-43-2	2.0E-04	2.2E-07
Naphthalene[c]	NA[d]	1.5E-05	6.3E-08
Arsenic	7440-38-2	3.0E-07	2.1E-08
Cadmium	7440-43-9	1.7E-06	1.1E-07
Formaldehyde	50-00-0	1.1E-04	7.7E-06
Nickel	7440-02-0	3.2E-06	2.2E-07

a. Chemical Abstract Service Number 7440-43-9.
b. Pounds per hour. Modeled for 8,760 hours per year for carcinogens.
c. Naphthalene regarded as a single compound of polyaromatic hydrocarbons (excluding the 7-polyaromatic hydrocarbon group).
d. A Chemical Abstract Service Number has not been assigned to the non-7-polyaromatic hydrocarbon TAP.

Table 7. VOLUME SOURCE TOXIC AIR POLLUTANT EMISSIONS RATES			
Source	Description	Benzene[a] (lb/hr)[b]	Naphthalene[c] (lb/hr)
BAY1_1	Bay 1 loading rack fugitives	0	4.38E-07
BAY1_2	Bay 1 loading rack fugitives	0	4.38E-07
BAY1_3	Bay 1 loading rack fugitives	0	4.38E-07
BAY2_1	Bay 2 loading rack fugitives	0	4.38E-07
BAY2_2	Bay 2 loading rack fugitives	0	4.38E-07
BAY2_3	Bay 2 loading rack fugitives	0	4.38E-07
BAY3_1	Bay 3 loading rack fugitives	0	4.38E-07
BAY3_2	Bay 3 loading rack fugitives	0	4.38E-07
BAY3_3	Bay 3 loading rack fugitives	0	4.38E-07
BAYT_1	Loading rack transmix bay fugitives	6.56E-06	5.93E-09
BAYT_2	Loading rack transmix bay fugitives	6.56E-06	5.93E-09
BAYT_3	Loading rack transmix bay fugitives	6.56E-06	5.93E-09

a. Chemical Abstract Service Number 7440-43-9\
b. Pounds per hour. Modeled for 8,760 hours per year for carcinogens.
c. Naphthalene regarded as a single compound of polyaromatic hydrocarbons (excluding the 7-polyaromatic hydrocarbon group).

3.10 Emission Release Parameters

Tables 8, 9, 10, and 11 list emissions release parameters for modeled sources.

Table 8. POINT SOURCE EMISSIONS RELEASE PARAMETERS (METRIC UNITS)									
Release Point	Description	UTM[a] Coordinates, NAD 83, Zone 12		Stack Base Elevation (m)	Stack Height (m)	Modeled Diameter (m)	Stack Gas Temperature (K)[c]	Stack Flow Velocity (m/s)[d]	Stack Release Type
		Easting (m)[b]	Northing (m)						
VCU	Vapor Control Unit	374,718	4,752,779	1,350.9	10.7	2.44	592.6	2.28	Vertical and uninterrupted
FURN	Natural gas-fired Comfort Heater	374,745	4,752,746	1,351.3	4.3	0.08	0[e] (ambient)	1.92	Vertical and uninterrupted

a. Universal Transverse Mercator.
b. Meters.
c. Kelvin.
d. Meters per second.
e. Specifying a temperature of absolute zero Kelvin directs AERMOD to set the stack temperature equal to the hourly ambient temperature obtained from the surface file of the meteorological data file.

Table 9. VOLUME SOURCE EMISSIONS RELEASE PARAMETERS (METRIC UNITS)							
Release Point	**Description**	**UTM[a] Coordinates, NAD 83, Zone 12**		**Base Elevation (m)**	**Release Height (m)**	**Initial Horizontal Dimension (m)**	**Initial Vertical Dimension (m)**
		Easting (m)[b]	**Northing (m)**				
BAY1_1	Bay 1 loading rack fugitives	374,838	4,752,760	1,350.2	1.63	1.13	1.51
BAY1_2	Bay 1 loading rack fugitives	374,836	4,752,760	1,350.2	1.63	1.13	1.51
BAY1_3	Bay 1 loading rack fugitives	374,834	4,752,760	1,350.2	1.63	1.13	1.51
BAY2_1	Bay 2 loading rack fugitives	374,838	4,752,750	1,350.3	1.63	1.13	1.51
BAY2_2	Bay 2 loading rack fugitives	374,836	4,752,750	1,350.3	1.63	1.13	1.51
BAY2_3	Bay 2 loading rack fugitives	374,834	4,752,750	1,350.3	1.63	1.13	1.51
BAY3_1	Bay 3 loading rack fugitives	374,838	4,752,740	1,350.4	1.63	1.13	1.51
BAY3_2	Bay 3 loading rack fugitives	374,836	4,752,740	1,350.4	1.63	1.13	1.51
BAY3_3	Bay 3 loading rack fugitives	374,834	4,752,740	1,350.4	1.63	1.13	1.51
BAYT_1	Transmix bay fugitives	374,838	4,752,732	1,350.5	1.63	1.13	1.51
BAYT_2	Transmix bay fugitives	374,836	4,752,732	1,350.5	1.63	1.13	1.51
BAYT_3	Transmix bay fugitives	374,834	4,752,732	1,350.5	1.63	1.13	1.51

a. Universal Transverse Mercator.
b. Meters.

Table 10. POINT SOURCE EMISSIONS RELEASE PARAMETERS (ENGLISH UNITS)									
Release Point	**Description**	**UTM[a] Coordinates, NAD 83, Zone 12**		**Stack Base Elevation (ft)[c]**	**Stack Height (ft)**	**Modeled Diameter (ft)**	**Stack Gas Temperature (°F)[d]**	**Stack Flow Velocity (fps)[e]**	**Stack Release Type**
		Easting (m)[b]	**Northing (m)**						
VCU	Vapor Control Unit	374,718	4,752,779	4,432.2	35.0	8.00	607.0	7.5	Vertical and uninterrupted
FURN	Natural gas heater	374,745	4,752,746	4,433.5	14.0	0.25	-459.7[f] (ambient)	6.3	Vertical and uninterrupted

a. Universal Transverse Mercator.
b. Meters.
c. Feet.
d. Degrees Fahrenheit.
e. Feet per second.
f. A release temperature of absolute zero Kelvin directs AERMOD to set the stack temperature equal to the hourly ambient temperature obtained from the surface file of the meteorological data file.

Table 11. VOLUME SOURCE EMISSIONS RELEASE PARAMETERS (ENGLISH UNITS)							
Release Point	Description	UTM[a] Coordinates, NAD 83, Zone 12		Base Elevation (ft)[c]	Release Height (ft)	Initial Horizontal Dimension (ft)	Initial Vertical Dimension (ft)
		Easting (m)[b]	Northing (m)				
BAY1_1	Bay 1 loading rack fugitives	374,838	4,752,760	4,429.63	5.35	3.71	4.95
BAY1_2	Bay 1 loading rack fugitives	374,836	4,752,760	4,429.69	5.35	3.71	4.95
BAY1_3	Bay 1 loading rack fugitives	374,834	4,752,760	4,429.76	5.35	3.71	4.95
BAY2_1	Bay 2 loading rack fugitives	374,838	4,752,750	4,429.99	5.35	3.71	4.95
BAY2_2	Bay 2 loading rack fugitives	374,836	4,752,750	4,430.05	5.35	3.71	4.95
BAY2_3	Bay 2 loading rack fugitives	374,834	4,752,750	4,430.15	5.35	3.71	4.95
BAY3_1	Bay 3 loading rack fugitives	374,838	4,752,740	4,430.48	5.35	3.71	4.95
BAY3_2	Bay 3 loading rack fugitives	374,836	4,752,740	4,430.48	5.35	3.71	4.95
BAY3_3	Bay 3 loading rack fugitives	374,834	4,752,740	4,430.51	5.35	3.71	4.95
BAYT_1	Transmix bay fugitives	374,838	4,752,732	4,430.74	5.35	3.71	4.95
BAYT_2	Transmix bay fugitives	374,836	4,752,732	4,430.74	5.35	3.71	4.95
BAYT_3	Transmix bay fugitives	374,834	4,752,732	4,430.77	5.35	3.71	4.95

a. Universal Transverse Mercator.
b. Meters.
c. Feet.

DEQ's permitting policies and guidance require that each permit application have stand-alone documentation to support the appropriateness of release parameters used in the air impact analyses. The modeling report provided justification and documentation of assumptions of key parameters used to model point and volume sources.

The vapor control unit (VCU) is an enclosed thermal oxidizer. The enclosure acts as a stack and the VCU is regarded as a point source with an uninterrupted vertical release. Additional documentation supporting the stack release height of 35 feet above grade and a diameter of 8 feet was noted in the Pocatello facility application under Attachment D to the October 6, 2016 submittal. This document was a manufacturer's proposal for the VCU, based on model number ZCT-2-8-3502-3/6-X. A rated maximum capacity of 642 standard cubic feet per minute of vapor combustion was listed as a design basis. Physical design parameters for the VCU stack were listed as 8 feet for outer diameter and 35 feet in height. Exit gas temperature for the VCU was obtained from a November 9, 2001, performance test on the John Zink enclosed thermal oxidizer while controlling loading rack vapors from the transfer of gasoline and distillate fuels at the Pocatello facility. The exit temperature was an average value recorded from a thermocouple located 20 feet above the base of the VCU enclosure. DEQ determined that the modeled exit temperature of 607 degrees Fahrenheit (ºF) is appropriate.

The volumetric flow rate of the VCU exhaust stream was modeled at approximately 22,600 actual cubic feet per minute (ACFM). Trinity re-evaluated the volumetric flow rate in the October 6, 2016 submittal and calculated a volumetric flow rate of 22,600 ACFM at stoichiometric conditions for the worst-case potential collected combustible vapor flow rate at the requested maximum potential loading capacity of the loading rack. The corresponding exit velocity was calculated to be 2.28 m/s. Applying a 100% stoichiometric assumption minimized the flow rate, as no excess air flow was included in the estimate, which minimized the flow rate and exit velocity estimates. This calculation was included in the electronic spreadsheet titled Pocatello PTE v6.0.xlsx" October 6, 2016 submittal, under the "VCU Stoichiometric Combustion" tab.

Section 4.3 of TLO's modeling report clearly describes the methods and assumptions used to determine modeling exhaust parameters for volume sources. The loading rack fugitive emissions, resulting from loading arm transfer of product from tankage and piping to the awaiting transport trailers, occur from three petroleum product loading bays and one dedicated trans-mix loading and ethanol unloading bay at the facility's loading rack. These sources were modeled as elevated volume sources. Each bay was split into three volume sources for a total of twelve loading rack volume sources. The assumptions identified in Section 4.3 and Appendix E1 of the permit application spreadsheet appeared reasonable and accurate.

The building heater was modeled as a point source with uninterrupted vertical flow. The release height was set at the same height as the office building BPIP structure tier height. The 3-inch exit diameter appears reasonable for a 105,000 Btu/hr heater. The 18.6 ACFM flow rate was based on EPA F-Factor for natural gas combustion, per EPA Method 19, 40 CFR 60, Appendix A. The exit temperature was assumed to be ambient, which is a conservative approach.

DEQ determined that the exhaust parameters used in the modeling analyses were adequately supported and appropriate for this project.

4.0 Results for Air Impact Analyses

TLO elected to demonstrate compliance with both the annual average and 1-hour NO_2 NAAQS using the Tier 2 Ambient Ratio Method (Tier 2 ARM). This method assumes that the maximum NO_2 fraction of modeled NOx impacts is 0.8 for 1-hour NO_2 impact analyses and 0.75 for annual NO_2 impact analyses. DEQ approval is not required for this method.

4.1 Results for Significant Impact Analyses

Table 12 provides results for the annual and 1-hour NO_2 significant impacts level analyses (SIL) analyses. Cumulative 1-hour NO_2 NAAQS impact analyses were needed because the 1-hour average SIL was exceeded. The annual NO_2 SIL was not exceeded, demonstrating that a cumulative annual NO_2 NAAQS demonstration was not required.

Table 12. RESULTS FOR SIGNIFICANT IMPACT ANALYSES				
Pollutant	**Averaging Period**	**Modeled Design Value Concentration (μg/m³)[a]**	**SIL[b] (μg/m³)**	**Percent of SIL**
NO_2[c]	1-hour	90.3[d]	7.5	1,200%
	Annual	0.50[e]	1.0	50%

a. Micrograms per cubic meter.
b. Significant impact level.
c. Nitrogen dioxide.
d. Modeled design value is the maximum 5-year mean value of maximum 1st highest daily 1-hour maximum impacts. This SIL compliance design value was calculated using the design impact of 112.9 μg/m³ multiplied by a factor of 0.80 for the 1-hour average Tier 2 Ambient Ratio Method (ARM) NO_2/NO_x conversion.
e. Modeled design value is the maximum annual impact of the individual years of a 5-year meteorological dataset. This SIL design value of 0.67 μg/m³ was multiplied by a factor of 0.75 for the annual average Tier 2 Ambient Ratio Method (ARM) NO_2/NO_x conversion.

4.2 Results for Cumulative NAAQS Impact Analyses

TLO presented cumulative impact analyses for the 1-hour and annual NO_2 NAAQS. DEQ elected not to reproduce the annual average NO_2 impacts because a cumulative NAAQS analysis for the annual average NO_2 was not required because the SIL analyses maximum annual impact was below the SIL. The results for the cumulative impact analyses are listed in Table 13. Ambient impacts for the facility were below the allowable 1-hour NO_2 NAAQS.

Table 13. RESULTS FOR CUMULATIVE IMPACT ANALYSES						
Pollutant	**Averaging Period**	**Modeled Design Value Concentration (μg/m³)[a]**	**Background Concentration (μg/m³)**	**Total Ambient Impact (μg/m³)**	**NAAQS[b] (μg/m³)**	**Percent of NAAQS**
NO_2[c]	1-hour	83.1[d]	33.8[e]	116.9	188	62%

a. Micrograms per cubic meter.
b. National ambient air quality standards.
c. Nitrogen dioxide.
d. Modeled design value is the maximum 5-year mean of 8th highest 24-hour values from each year of a 5-year meteorological dataset. The design impact of 103.9 μg/m³ was multiplied by a factor of 0.80 for the 1-hour average Tier 2 Ambient Ratio Method (ARM) NO_2/NO_x conversion.
e. NW AIRQUEST background value.

4.3 Results for Toxic Air Pollutant Impact Analyses

Table 14 presents results for TAPs modeling analyses. The impacts listed below are attributed to the facility-wide emissions. All design impacts are the maximum impacts. Annual average carcinogenic TAP impacts used the maximum impact from five individual years of meteorological data. All TAP impacts were well below the applicable increments.

Table 14. RESULTS FOR TOXIC AIR POLLUTANT ANALYSES					
Pollutant	**CAS[a] Number**	**Averaging Period**	**Maximum Modeled Concentration (μg/m³)[b]**	**AACC[c] (μg/m³)**	**Percent of Increment**
Benzene	71-43-2	Annual	3.0E-03	1.2E-01	3%
Naphthalene[d]	NA[e]	Annual	3.4E-04	1.4E-02	2%
Arsenic	7440-38-2	Annual	1.1E-06	2.3E-04	<1%
Cadmium	7440-43-9	Annual	6.0E-06	5.6E-04	1%
Formaldehyde	50-00-0	Annual	4.1E-04	7.7E-02	<1%
Nickel	7440-02-0	Annual	1.1E-05	4.2E-03	<1%

a. Chemical Abstract Service
b. Micrograms per cubic meter.
c. Ambient Concentration for Carcinogens (Toxic Air Pollutant allowable increments listed in Idaho Air Rules Section 586).
d. Naphthalene as a single compound of polyaromatic hydrocarbons (excluding the 7-polyaromatic hydrocarbon group).
e. A Chemical Abstract Service Number has not been assigned to the non-7-polyaromatic hydrocarbon TAP.

5.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the Tesoro Logistics Pocatello facility will not cause or significantly contribute to a violation of any NAAQS and will not exceed allowable TAP increments.

References

1. *Policy on NAAQS Compliance Demonstration Requirements of IDAPA 58.01.01.203.02 and 01.403.02.* Idaho Department of Environmental Quality Policy Memorandum. Tiffany Floyd, Administrator, Air Quality Division, June 10, 2014.

2. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

PTC Prcessing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: **Tesoro Logistics Operations LLC -**
Address: **1189 Tank Farm Road**
City: **Pocatello**
State: **Idaho**
Zip Code: **83204**
Facility Contact: **John Roark**
Title: **Vice President, Mid-Continent**
AIRS No.: **077-00023**

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	3.2	0	3.2
SO_2	0.0	0	0.0
CO	1.8	0	1.8
PM10	0.2	0	0.2
VOC	0.0	1.53	-1.5
TAPS/HAPS	0.0	0	0.0
Total:	0.0	1.53	**3.7**
Fee Due	**$ 2,500.00**		

Comments: