Western Refining
LOGISTICS

WNR LISTED NYSE

March 1, 2019

Mr. Ted Schooley
NMED Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505

RE: Application for a Renewal to Title V Permit P024-R2M1, for the Western Refining Southwest, Inc. and Western Refining Terminals, LLC. - Bloomfield Products Terminal

Dear Mr. Schooley,

Western Refining Southwest, Inc. and Western Refining Terminals, LLC. is submitting this application to renew the Title V permit for the Bloomfield Products Terminal. The facility is located approximately 0.27 miles south of Bloomfield, NM. Bloomfield Products Terminal is currently permitted under Operating Permit P-024-R2M1 and NSR Permit 0402-M12R4. The facility is a bulk storage terminal that receives materials via loading rack, pipelines, or trucks, stores the materials in storage tanks, and loads the materials out elsewhere at the facility.

The format and content of this application are consistent with the Bureau's current policy regarding Title V applications. Title V Permit P-024-R2M1 expires on March 4, 2020. Western Refining Terminals, LLC and Western Refining Southwest, Inc. is submitting this application in accordance with 20.2.70.300.B.2 NMAC, requiring a timely application for a Title V renewal be submitted at least 12 months prior to the date of permit expiration.

Enclosed are two hard copies of the application, including an original certification and two discs containing the electronic files. Please feel free to contact either myself at (505) 632-4195 or the Trinity Consultants Albuquerque office at (505) 266-6611 if you have any questions regarding this application.

Sincerely,

Tommy D. Roberts
Terminal Supervisor
Western Refining

cc: B. Davis (WNR)
K. Robinson (WNR)

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		AIRS No.:

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well. For NOI applications, submit the entire UA1, UA2, and UA3 applications on a single CD (no copies are needed). For NOIs, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☑ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ a NOI 20.2.73 NMAC ☐ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☑ Title V renewal ☐ TV minor mod. ☐ TV significant mod. TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) ☐ minor modification to a PSD source ☐ a PSD major modification

Acknowledgements:
☑ I acknowledge that a pre-application meeting is available to me upon request. ☑ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.
☐ $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).
☐ Check No.: in the amount of
☑ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.
☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance program (SBEAP) and qualifies for 50% of the normal application and permit fees. Enclosed is a check for 50% of the normal application fee which will be verified with the Small Business Certification Form for your company.
☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance Program (SBEAP) but does not qualify for 50% of the normal application and permit fees. To see if you qualify for SBEAP assistance and for the small business certification form go to https://www.env.nm.gov/aqb/sbap/small_business_criteria.html).

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.70.300.B.2 NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.): 1156	Updating Permit/NOI #: P024-R2M1
1	Facility Name: Bloomfield Products Terminal	Plant primary SIC Code (4 digits): 5171	
		Plant NAIC code (6 digits): 424710	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): 50 County Road 4990, Bloomfield, NM 87413		
2	Plant Operator Company Name: Western Refining Terminals, LLC	Phone/Fax: (505) 632-4195	
a	Plant Operator Address: 50 County Road 4990, P.O. Box 159, Bloomfield, NM 87413		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 86-0784398 Delaware LLC	
3	Plant Owner(s) name(s): Western Refining Terminals, LLC and Western Refining Southwest, Inc.	Phone/Fax: (505) 632-4195
a	Plant Owner(s) Mailing Address(s): 19100 Ridgewood Parkway, San Antonio, TX 78259	
4	Bill To (Company): Western Refining Terminals, LLC	Phone/Fax: (505) 632-4166
a	Mailing Address: 111 County Road 4990, Bloomfield, NM 87413	E-mail: Kelly.Robinson@andeavor.com
5	☑ Preparer: ☑ Consultant: Hao Zhang, Trinity Consultants Inc.	Phone/Fax: (713) 552-1371 / (713) 552-1374
a	Mailing Address: 1800 West Loop South, Suite 1000, Houston, Texas 77027	E-mail: hzhang@trinityconsultants.com
6	Plant Operator Contact: Tommy D. Roberts	Phone/Fax: (505) 632-4195
a	Address: P.O. Box 159, 50 County Road 4990 Bloomfield, NM 87413	E-mail: Tommy.D.Roberts@andeavor.com
7	Air Permit Contact: Kelly R. Robinson	Title: Environmental Supervisor
a	E-mail: Kelly.Robinson@andeavor.com	Phone/Fax: (505) 632-4166
b	Mailing Address: 111 County Road 4990, Bloomfield, NM 87413	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☑ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☑ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☑ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☑ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☑ No	If yes, give month and year of shut down (MM/YY): N/A
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☑ Yes ☐ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☑ Yes ☐ No ☐ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☑ Yes ☐ No	If yes, the permit No. is: P-024-R2M1
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☑ No	If yes, the NPR No. is: N/A
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☑ No	If yes, the NOI No. is: N/A
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☑ Yes ☐ No	If yes, the permit No. is: 0402-M12R4
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☑ No	If yes, the register No. is: N/A

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: ~ 792 barrels of material*	Daily: ~ 19,000 barrels of material*	Annually: ~ 6,935,000 barrels of material*
b	Proposed	Hourly: ~ 792 barrels of material*	Daily: ~ 19,000 barrels of material*	Annually: ~ 6,935,000 barrels of material*
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: ~ 792 barrels of material*	Daily: ~ 19,000 barrels of material*	Annually: ~ 6,935,000 barrels of material*
b	Proposed	Hourly: ~ 792 barrels of material*	Daily: ~ 19,000 barrels of material*	Annually: ~ 6,935,000 barrels of material*

*For informational purposes only; not intended to be an enforceable limit.

Section 1-D: Facility Location Information

1	Section: 26 & 27	Range: 11W	Township: 29N	County: San Juan	Elevation (ft): 5,525
2	UTM Zone: ☐ 12 or ☑ 13			Datum: ☑ NAD 27 ☐ NAD 83 ☐ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 234,000 m			UTM N (in meters, to nearest 10 meters): 4,065,500 m	
b	**AND** Latitude (deg., min., sec.): 36° 41' 50"			Longitude (deg., min., sec.): -107° 58' 20"	
3	Name and zip code of nearest New Mexico town: Bloomfield, NM 87413				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From the intersection of South Bloomfield Boulevard and State Road 4990, the facility is approximately 0.5 miles East on State Road 4990.				
5	The facility is 0.27 (distance) miles South (direction) of Bloomfield (nearest town).				
6	Status of land at facility (check one): ☑ Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Municipalities: Aztec, Bloomfield, and Farmington; Indian Tribes: Navajo Nation; and Counties: San Juan County				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.nmenv.state.nm.us/aqb/modeling/class1areas.html)? ☐ Yes ☐ No (20.2.72.206.A.7 NMAC) N/A – this application being submitted under 20.2.70 NMAC.				
9	Name nearest Class I area: Mesa Verde National Park				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 66 km				
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: ~ 122 m				
12	Method(s) used to delineate the Restricted Area: Fence and locking gates "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☑ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☑ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8,760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A	☐AM ☐PM	End: N/A	☐AM ☐PM		
3	Month and year of anticipated start of construction: N/A – no proposed construction					
4	Month and year of anticipated construction completion: N/A – no proposed construction					
5	Month and year of anticipated startup of new or modified facility: N/A – no new or modified facility					
6	Will this facility operate at this site for more than one year? ☑ Yes ☐ No					

Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☐Yes ☑ No If yes, specify:

a	If yes, NOV date or description of issue: N/A		NOV Tracking No: N/A
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes ☑ No If Yes, provide the 1c & 1d info below:		
c	Document Title: N/A	Date: N/A	Requirement # (or page # and paragraph #): N/A
d	Provide the required text to be inserted in this permit: N/A		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? ☐ Yes ☑ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☑ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☑ Yes ☐ No		
a	If Yes, what type of source? ☐ **Major** (☐ ≥10 tpy of any single HAP **OR** ☐ ≥25 tpy of any combination of HAPS) **OR** ☑ **Minor** (☑ <10 tpy of any single HAP **AND** ☑ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes ☑ No		
a	If yes, include the name of company providing commercial electric power to the facility: N/A . Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application

(This section applies to 20.2.72.300 NMAC Streamline applications only)

1	☐ I have filled out Section 18, "Addendum for Streamline Applications." ☑ N/A (This is not a Streamline application.)

Section 1-H: Current Title V Information - Required for all applications from TV Sources

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (20.2.70.300.D.2 NMAC): Tommy D. Roberts	Phone: (505) 632-4195
a	R.O. Title: Terminal Supervisor	R.O. e-mail: Tommy.D.Roberts@andeavor.com
b	R. O. Address: P.O. Box 159, 50 County Road 4990 Bloomfield, NM 87413	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): N/A	Phone: N/A
a	A. R.O. Title: N/A	A. R.O. e-mail: N/A
b	A. R. O. Address: N/A	
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): None	
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): The immediate parent of Western Refining Southwest, Inc. is Giant Industries, Inc. The immediate parent of Western Refining Terminals, LLC is WNRL Energy, LLC.	
a	Address of Parent Company: 19100 Ridgewood Parkway, San Antonio, TX 78259	
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): The subsidiaries of Western Refining Terminals, LLC are Asphalt Terminals, LLC; Western Refining Delaware Basin Storage, LLC. The subsidiaries of Western Refining Southwest, Inc. are Tesoro Refining & Marketing Company LLC; Tesoro Alaska Company LLC; Northern Tier Energy GP LLC; Western Refining GP, LLC, Western Refining LP, LLC; Ciniza Production Company, Dial Oil Co., LLC; Empire Oil Co., Giant Stop-n-Go of New Mexico, LLC; Western Refining Conan Gathering Holdings, LLC; Western Refining Retail, LLC; Tesoro Great Plains Holding Company LLC; Western Refining Yorktown Holding Company; San Juan Refining Company, LLC; Giant Four Corners, LLC; Western Refining Yorktown, Inc.; and Western Refining TRS II, LLC.	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Kelly Robinson - (505) 801-5616	

7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: **States**: Colorado (~33.5km); **Indian Tribes**: Navajo Nation (~25km); Ute Mountain (~29km); Southern Ute (~30km); Jicarilla Apache (~70km)

Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

Hard Copy Submittal Requirements:

1) One hard copy **original signed and notarized application package printed double sided 'head-to-toe' 2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. Please include a copy of the check on a separate page.

2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This copy does not need to be 2-hole punched, but **must be double sided**. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.

3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically on compact disk(s) (CD). For permit application submittals, **two** CD copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a single CD submittal.

4) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver OR** one additional electronic copy of the air dispersion modeling including the input and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau. The complete dispersion modeling study, including all input/output files, should be submitted electronically as part of the electronic submittal.

5) If subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted in duplicate (2 separate CDs). A single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format with the number of additional hard copies corresponding to the number of CD copies required. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 3 electronic files (2 MSWord docs: Universal Application section 1 and Universal Application section 3-19) and 1 Excel file of the tables (Universal Application section 2) on the CD(s). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

4) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much

as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision # (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. The footer information should not be modified by the applicant.

Table of Contents

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
B-502A	Boiler	Superior Boiler Works	6-X-1500	17357	12.6 MMBtu/hr	12.6 MMBtu/hr	2012	N/A	10200602	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								B-502A				
API	API Oily Water Separator	N/A	N/A	N/A	500 gpm	500 gpm	1974	N/A (has cover)	30600508	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								API				
S-1 S-2	Benzene Strippers	Delta	53 200RS / V600A	8388-1 8388-2	200 gpm (each)	200 gpm (each)	2007	N/A	263000000	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								S-1, S-2				
TLR-1	Truck Loading/Unloading Rack	N/A	N/A	N/A	N/A	N/A	1979	VRU (gasoline loading only)	40400250	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								VRU, TLR-1				
EG-1	All regulated storage tanks	N/A	N/A	N/A	varies	None	Varies	N/A (some have floating roofs)	40400199	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								Varies				
F-1	Fugitives	N/A	N/A	N/A	N/A	N/A	1977	N/A	40400151	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								N/A				
P-521[5]	Emergency Fire Water Pump	Fairbanks/ Cummins	NTA-855F	18105224	400 hp	400 hp	1983	N/A	20200101	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							1983	P-521				
P-521A[5]	Emergency Fire Water Pump	Fairbanks/ Cummins	KT-855-F2	10813819	380 hp	380 hp	1979	N/A	20200101	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
							1979	P-521A				
P-526[5]	Emergency Fire Water Pump	Fairbanks/ Detroit	DDFP-06FH 8386F	06VF220274	460 hp	460 hp	1998	N/A	20200101	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
							1998	P-526				
SSM	Startup, Shutdown & Maintenance	N/A	N/A	N/A	N/A	N/A	1977	N/A	40400150	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
								N/A				
										☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

[5] Units P-521, P-521A, and P-526 are exempt under NSR permitting but cannot be considered insignificant for Title V applications due to MACT ZZZZ applicability.

Table 2-B: Insignificant Activities[1] (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf . TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction[2]	For Each Piece of Equipment, Check Onc
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction[2]	
TI-1	Treatment Impoundments	N/A	N/A	N/A	20.2.72.202.B.5	N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	N/A	1.a.	N/A	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

[2] Specify date(s) required to determine regulatory applicability.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
API	Covered Separator	Unknown	VOC	API	Unnknown	Unknown
VRU TLR-1	Vapor recovery unit	Unknown	VOC	TLR-1	98%	Exhaust emissions monitor

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		TSP[1,2]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
TLR-1 (w/o VRU)	-	-		-	-	912.58	-	-	-	-	-	-	-	-	-	-	-	-
F-1	-	-	-	-	-	23.56	-	-	-	-	-	-	-	-	-	-	-	-
B-502A	0.44	1.93	1.89	8.28	0.20	0.88	0.18	0.79	-	-	0.13	0.55	0.13	0.55	-	-	-	-
EG-1	-	-	-	-	-	172.81	-	-	-	-	-	-	-	-	-	-	-	-
S-1, S-2 (if not operating)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
API (uncovered)	-	-	-	-	-	137.97	-	-	-	-	-	-	-	-	-	-	-	-
P-521*	10.58	46.35	1.76	7.72	0.41	1.78	0.57	2.51	-	-	0.44	1.93	0.44	1.93	-	-	-	-
P-521A*	11.73	51.38	2.53	11.07	0.96	4.19	0.77	3.38	-	-	0.82	3.61	0.82	3.61	-	-	-	-
P-526*	14.20	62.20	3.06	13.40	1.16	5.08	0.93	4.09	-	-	1.00	4.37	1.00	4.37	-	-	-	-
Totals	**36.95**	**161.86**	**9.24**	**40.47**	**2.72**	**1258.85**	**2.46**	**10.76**	**-**	**-**	**2.39**	**10.47**	**2.39**	**10.47**	**-**	**-**	**-**	**-**

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for TSP unless TSP is set equal to PM10 and PM2.5.

[2] TSP not included because the the NM TSP standard was repealed on 11/30/2018.

*Note that units P-521, P-521A, and P-526 are included with this application because they are subject to MACT ZZZZ; however, they are not subject to emission limitations under MACT ZZZZ or permitting under 20.2.72 NMAC.

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or $1.41E^{-4}$).

Unit No.	NOx		CO		VOC		SOx		TSP[1,2]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
TLR-1*	-	-		-	-	18.44	-	-	-	-	-	-	-	-	-	-	-	-
F-1	-	-	-	-	-	23.56	-	-	-	-	-	-	-	-	-	-	-	-
B-502A	0.44	1.93	1.89	8.28	0.20	0.88	0.18	0.79	-	-	0.13	0.55	0.13	0.55	-	-	-	-
EG-1	-	-	-	-	-	172.81	-	-	-	-	-	-	-	-	-	-	-	-
S-1, S-2	-	-	-	-	-	8.95	-	-	-	-	-	-	-	-	-	-	-	-
API	-	-	-	-	-	5.52	-	-	-	-	-	-	-	-	-	-	-	-
P-521**	10.58	2.65	1.76	0.44	0.41	0.10	0.57	0.14	-	-	0.44	0.11	0.44	0.11	-	-	-	-
P-521A**	11.73	2.93	2.53	0.63	0.96	0.24	0.77	0.19	-	-	0.82	0.21	0.82	0.21	-	-	-	-
P-526**	14.20	3.55	3.06	0.76	1.16	0.29	0.93	0.23	-	-	1.00	0.25	1.00	0.25	-	-	-	-
Totals	**36.95**	**11.06**	**9.24**	**10.12**	**2.72**	**230.79**	**2.46**	**1.36**	**-**	**-**	**2.39**	**1.12**	**2.39**	**1.12**	**-**	**-**	**-**	**-**

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for TSP unless TSP is set equal to PM10 and PM2.5.

[2] TSP not included because the the NM TSP standard was repealed on 11/30/2018.

*Annual VOC emission limit from unit TLR-1 is inconsistent with permits P-024-R2M1 & 0402-M12R4 due to an excel rounding error in the UA2 form submitted for NSR permit revision 0402-M12R2

**Note that units P-521, P-521A, and P-526 are included with this application because they are subject to MACT ZZZZ; however, they are not subject to emission limitations under MACT ZZZZ or permitting under 20.2.72 NMAC.

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)

☐ This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scehduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine our predictable startup, shutdown or scheduled maintenance (SSM)[1], including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		TSP[2,3]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM	-	-	-	-	-	10.00	-	-	-	-	2.20	0.10	2.20	0.10	9.40E-05	1.20E-05	-	-
Totals	-	-	-	-	-	10.00	-	-	0.00	0	2.20	0.10	2.20	0.10	9.40E-05	1.20E-05	-	-

[1] **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in this table. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

[2] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for TSP unless TSP is set equal to PM10 and PM2.5.

[3] TSP not included because the the NM TSP standard was repealed on 11/30/2018.

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

☑ I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		TSP		PM10		PM2.5		□ H_2S or □ Lead	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals:																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package. Include the stack exit conditions for each unit that emits from a stack, including blowdown venting parameters and tank emissions. If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
VRU TLR-1	TLR-1	V	No	22	60	2		N/A	5.9	0.7
B-502A	B-502A	V	No	12	360	42		N/A	14.6	1.9
S-1, S-2	S-1, S-2	V	No	31	80	Unknown		N/A	Unknown	3.0
P-521	P-521	V	No	4.5	880	42.17		N/A	309.2	0.42
P-521A	P-521A	Unknown	Unknown	Unknown	Unknown	Unknown		N/A	Unknown	Unknown
P-526	P-526	Unknown	Unknown	Unknown	Unknown	Unknown		N/A	Unknown	Unknown

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Benzene ☒ HAP or ☐ TAP		Toluene ☒ HAP or ☐ TAP		Ethylbenzene ☒ HAP or ☐ TAP		Xylene ☒ HAP or ☐ TAP		n-Hexane ☒ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
TLR-1	TLR-1	0.075	0.37	0.017	0.073	0.015	0.066	0.0012	0.0053	0.008	0.035	0.030	0.13						
F-1	F-1	1.53	6.69	0.13	0.55	0.55	2.39	0.084	0.37	0.55	2.40	0.19	0.83						
B-502A	B-502A	0.0012	0.0052	2.65E-05	1.16E-04	4.28E-05	1.88E-04	-	-	-	-	7.94E-05	3.48E-04						
EG-1	Regulated Tanks	1.37	5.99	0.19	0.85	0.21	0.90	0.014	0.060	0.089	0.39	0.80	3.52						
S-1, S-2	S1, S2	3.71	8.52	0.81	1.86	1.70	3.91	0.14	0.32	1.00	2.30	-	-						
API	API	2.93	2.67	0.57	0.52	0.99	0.91	0.085	0.078	0.71	0.65	0.014	0.013						
P-521*	P-521*	0.011	0.0027	0.0026	6.53E-04	0.0011	2.86E-04	-	-	7.98E-04	2.00E-04	-	-						
P-521A*	P-521A*	0.010	0.0025	0.0025	6.20E-04	0.0011	2.72E-04	-	-	7.58E-04	1.90E-04	-	-						
P-526*	P-526*	0.012	0.0031	0.0030	7.51E-04	0.0013	3.29E-04	-	-	9.18E-04	2.29E-04	-	-						
Totals:		9.64	24.25	1.72	3.86	3.46	8.17	0.32	0.83	2.35	5.78	1.04	4.49						

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
B-502A	Natural Gas	Pipeline Quality Natural Gas	1000 Btu/scf	0.013 MMscf	110.04 MMscf	50gr/Mscf	N/A
P-521	Diesel	Purchased Diesel	19,300 Btu/lb	~20.9 gal	~10,450 gal	~15 ppm	N/A
P-521A	Diesel	Purchased Diesel	19,300 Btu/lb	~23.9 gal	~11,967.8 gal	~15 ppm	N/A
P-526	Diesel	Purchased Diesel	19,300 Btu/lb	~31.7 gal	~15,827.3 gal	~15 ppm	N/A

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
2*	N/A	Filtered Water	100% H2O	8.34	18	54.6	0.21	62.2	0.28
3	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
4	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
5*	N/A	Storm Water	100% H2O	8.34	18	54.6	0.21	62.2	0.28
8	40400199	Crude	See Attachment		60	62.7	5.2	76.12	6.5
9	40400199	Crude	See Attachment		60	60.2	4.9	71.8	6.1
11	40400199	Crude	See Attachment		60	54.6	4.5	62.2	4.5
12	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
13	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
14	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
18	40400199	Diesel	See Attachment		130	54.6	0.0058	62.2	0.0058
19	40400199	Diesel	See Attachment		130	54.6	0.0058	62.2	0.0058
20	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
23	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
24	40400199	Diesel	See Attachment		130	54.6	0.0058	62.2	0.0058
25	40400199	Diesel	See Attachment		130	54.6	0.0058	62.2	0.0058
26	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
27	40400199	Heavy Burner Fuel	See Attachment		180	180	0.0002	180	0.0002
28	40400199	Crude	See Attachment		60	54.6	4.5	62.2	4.5
29	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
30	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
31	40400199	Crude	See Attachment		60	54.6	4.5	62.2	4.5
32	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
33*	N/A	Water	100% H2O	8.34	18	54.6	0.21	62.2	0.28
35	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
36	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
37*	N/A	Water	100% H2O	8.34	18	54.6	0.21	62.2	0.28
38*	N/A	Water	100% H2O	8.34	18	54.6	0.21	62.2	0.28
41	40400199	Crude	See Attachment		60	54.6	4.5	62.2	4.5
42A	40400199	Crude	See Attachment		60	54.6	4.5	62.2	5.1
42B	40400199	Crude	See Attachment		60	54.6	4.5	62.2	5.1
44	40400199	Premium Gasoline	See Attachment		67	54.6	5.1	62.2	5.1
45	40400199	Ethanol	See Attachment		46.1	54.6	0.54	62.2	0.54

* Exempt from permitting, but included in EG1

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-L2 below)	Roof Type (refer to Table 2-L2 below)	Capacity**		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
2*	1/1/1978	Filtered Water	N/A	FX	67,145	10,675	30.0	7	WH	WH	Good	131,400,000	47
3	9/1/1966	Premium Gasoline	Liquid-mounted Weather Shield	EF	9,876	1,570	12.5	N/A	WH	WH	Good	40,000,000	96
4	9/1/1966	Premium Gasoline	Liquid-mounted Weather Shield	EF	9,876	1,570	12.5	N/A	WH	WH	Good	40,000,000	96
5*	9/1/1966	Storm Water	N/A	FX	9,475	1,506	12.5	N/A	WH	WH	Good	Unknown	Unknown
8	1/1/1960	Crude	N/A	FX	504	80	3.7	42.7	AD	AD	Good	5,000,000	236
9	1/1/1960	Crude	N/A	FX	504	80	3.7	42.7	AD	AD	Good	5,000,000	236
11	12/1/1982	Crude	Liquid-mounted Rim-mounted	EF	55,954	8,896	30.5	N/A	WH	WH	Good	60,000,000	26
12	12/1/1982	Premium Gasoline	Liquid-mounted Rim-mounted	EF	55,954	8,896	30.5	N/A	WH	WH	Good	70,000,000	30
13	1/1/1959	Premium Gasoline	Liquid-mounted Rim-mounted	EF	30,303	4,818	20.4	N/A	WH	WH	Good	40,000,000	31
14	1/1/1961	Premium Gasoline	Mechanical Shoe Rim-mounted	EF	30,141	4,792	20.4	N/A	WH	WH	Good	40,000,000	32
18	1/1/1974	Diesel	Vapor-mounted None	IF	55,954	8,896	30.5	N/A	WH	WH	Good	50,000,000	21
19	1/1/1975	Diesel	N/A	FX	36,712	5,837	24.7	65.6	WH	WH	Good	65,000,000	42
20	11/1/2007	Premium Gasoline	Liquid-mounted None	IF	22,158	3,523	18.3	N/A	WH	WH	Good	3,000,000	3
23	1/1/1962	Premium Gasoline	Mechanical Shoe Rim-mounted	EF	40,427	6,427	25.9	N/A	WH	WH	Good	65,000,000	38
24	4/4/2006	Diesel	N/A	FX	10,107	1,607	13.1	16.4	WH	WH	Good	50,000,000	118
25	4/4/2006	Diesel	N/A	FX	10,107	1,607	13.1	16.4	WH	WH	Good	50,000,000	118
26	12/1/1967	Premium Gasoline	Vapor-mounted Rim-mounted	IF	4,000	636	10.4	N/A	WH	WH	Good	10,000,000	60
27	1/1/1967	Heavy Burner Fuel	N/A	FX	10,000	1,590	12.8	62.3	WH	WH	Good	8,000,000	19
28	4/1/1969	Crude	Mechanical Shoe Rim-mounted	EF	96,689	15,372	36.6	N/A	WH	WH	Good	100,000,000	25
29	1/1/1974	Premium Gasoline	Vapor-mounted None	IF	20,100	3,196	19.5	N/A	WH	WH	Good	10,000,000	12
30	1/1/1974	Premium Gasoline	Vapor-mounted Rim-mounted	IF	20,144	3,203	18.3	N/A	WH	WH	Good	120,000,000	142
31	8/1/1977	Crude	Mechanical Shoe Shoe-mounted	EF	110,000	17,489	42.7	N/A	WH	WH	Good	120,000,000	26
32	4/7/1988	Premium Gasoline	Mechanical Shoe Rim-mounted	EF	20,144	3,203	18.3	N/A	WH	WH	Good	120,000,000	142
33*	N/A	Water	N/A	FX	403	64	4.0	3	WH	WH	Good	10,512,000	621
35	1/1/1983	Premium Gasoline	Mechanical Shoe Rim-mounted	IF	55,954	8,896	30.5	N/A	WH	WH	Good	100,000,000	43
36	1/1/1983	Premium Gasoline	Mechanical Shoe None	IF	55,954	8,896	30.5	N/A	WH	WH	Good	100,000,000	43
37*	N/A	Water	N/A	FX	121	19	4.0	1	OT(Beige)	OT(Beige)	Good	2,102,400	414
38*	N/A	Water	N/A	FX	302	48	4.0	2	OT(Beige)	OT(Beige)	Good	10,512,000	829
41	3/1/2002	Crude	Liquid-mounted Rim-mounted	IF	2,800	445	7.6	N/A	WH	WH	Good	4,000,000	34
42A	2007	Crude	N/A	FX	403	65	3.7	N/A	WH	WH	Good	2,000,000	118
42B	6/29/1905	Crude	N/A	FX	403	64	3.7	16.4	WH	WH	Good	2,000,000	118
44	1/2/1989	Premium Gasoline	Vapor-mounted Rim-mounted	IF	2,098	334	7.6	N/A	WH	WH	Good	1,000,000	11
45	8/2/1998	Ethanol	Mechanical Shoe Rim-mounted	IF	5,484	872	10.7	N/A	WH	WH	Good	1,500,000	7

* Exempt from permitting, but included in EG1

** For informational purposes only - not intended to be an enforceable limit

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	**Mechanical Shoe Seal**	**Liquid-mounted resilient seal**	**Vapor-mounted resilient seal**	**Seal Type**	**WH**: White	Good
IF: Internal Floating Roof	**A**: Primary only	**A**: Primary only	**A**: Primary only	**A**: Mechanical shoe, primary only	**AS**: Aluminum (specular)	Poor
EF: External Floating Roof	**B**: Shoe-mounted secondary	**B**: Weather shield	**B**: Weather shield	**B**: Shoe-mounted secondary	**AD**: Aluminum (diffuse)	
P: Pressure	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**LG**: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M^3 = 42.0 gal

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
Four Corners Crude	Mixed hydrocarbons	Liquid	19,000 b/d	N/A - This facility does not produce any material			
Unleaded Gasoline	Mixed hydrocarbons	Liquid	9,500 b/d				
Diesel	Mixed hydrocarbons	Liquid	9,500 b/d				
Ethanol	Ethanol	Liquid	4,000 b/d				
Naphtha	Mixed hydrocarbons	Liquid	4,000 b/d				

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
VRU	VOC	John Zink	Series 2000 AAT/Z-609-9-8-8-115-X	VR-92087	Instantaneous	6 hr rolling	Unlimited	Unlimited	97.5% Confidence

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
There are no PEMS at the facility.								

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☑ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
B-502A	**mass GHG**	6455.73	0.012	0.12											6455.87	
	CO_2e	6455.73	3.63	3.04												6462.40
P-521	**mass GHG**	57.52	0.0056	0.0028											57.53	
	CO_2e	57.52	1.67	0.070												59.27
P-521A	**mass GHG**	65.88	0.0064	0.0032											65.89	
	CO_2e	65.88	1.92	0.080												67.87
P-526	**mass GHG**	87.12	0.0085	0.0043											87.13	
	CO_2e	87.12	2.53	0.11												89.76
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
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	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO2e															
Total	**mass GHG**	6666.26	0.033	0.13											6666.42	
	CO_2e	6666.26	9.75	3.30												6679.30

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[3] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[4] Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

[5] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

Routine or predictable emissions during Startup, Shutdown, and Maintenance (SSM): Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

The Bloomfield Products Terminal (formerly Bloomfield Refinery) is owned by Western Refining Terminals, LLC and Western Refining Southwest, Inc. The Terminal is operated by Western Refining Terminals, LLC (Western). This facility is a bulk storage terminal that receives materials via pipelines or trucks (i.e., directly from trucks and not via the loading rack). The facility stores the materials in storage tanks and loads the materials out via the loading rack, pipelines, or trucks elsewhere at the facility.

This application is being submitted for a renewal to the current Title V permit in accordance with 20.2.70.300.B.2 NMAC, which requires a timely application be submitted at least 12 months prior to the expiration date of the current Title V permit. The facility is currently authorized to operate under Title V permit P-024-R2M1, which expires on March 4, 2020.

The facility is also authorized by NSR permit 0402-M12R4 and includes the following regulated air emissions sources:

- One boiler (B-502A)
- Truck loading/unloading at truck rack TLR-1 (with VRU for gasoline loading operations) and truck unloading elsewhere in the facility
- Storage tanks (EG-1)
- Wastewater treatment equipment (API, S-1, and S-2)
- Facility-wide fugitives (F-1)
- Startup, shutdown, maintenance (SSM)
- Three (3) emergency fire water pumps (P-521, P-521A, and P-526)

Bloomfield Products Terminal is a PSD major source (list of 28), Title V major source, and an area source of HAPs.

With this renewal, MACT 40 CFR 63 Subpart EEEE will no longer apply to this facility. Previously, this subpart applied to the following: truck unloading, transfer rack, and equipment leak components in organic liquids service that are associated with transfer rack. The facility became subject to this regulation when it was a major source of HAPs and the affected equipment remains subject in the current Title V permit despite the facility becoming an area source of HAPs pursuant to the MACT "Once In, Always In" Provision. With the January 25, 2018 withdrawal of the "Once In, Always In" Provision, the facility is no longer subject to this subpart.

In addition, emissions for the emergency fire water pumps have been added with this renewal, as described in Section 6 of this application. Also, the HAP emission calculation methodology from the boiler unit has been updated to utilize the n-hexane emission factor from Ventura County AB 2588 Combustion Emission Factors, May 2001.

Finally, with this renewal Western has up-dated the facility owner and operator status. The associated Responsible Official has been updated accordingly.

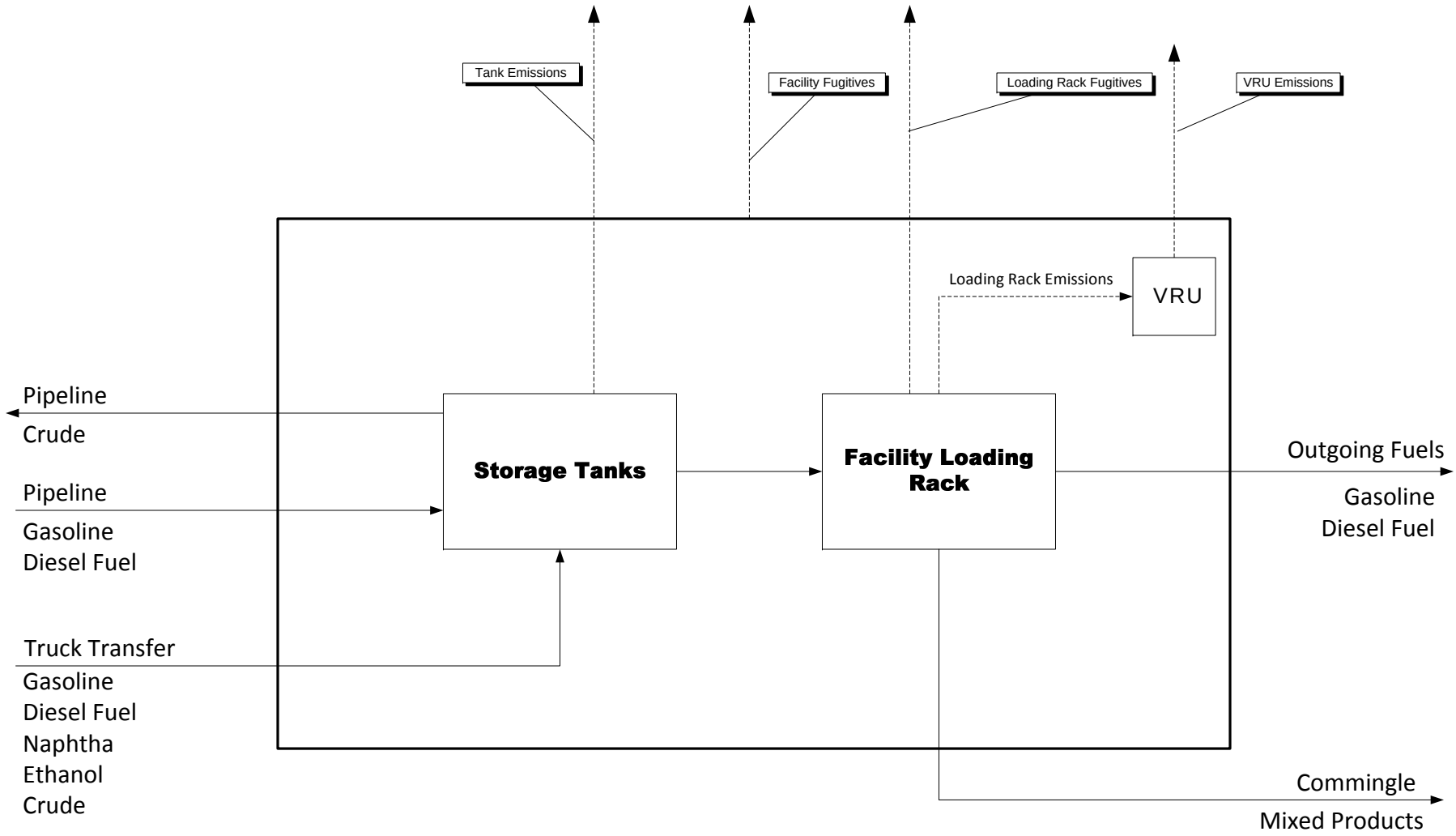
No other changes to the facility are proposed with this renewal.

Section 4

Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

A process flow sheet is included in this section.



Legend

Emission Unit

Emissions

Block Flow Diagram
Bloomfield Products Terminal

Section 5

Plot Plan Drawn To Scale

A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.

A plot plan is included in this section.

NOTES

REFERENCE DWGS.	NO.	REVISION	JOB No.	BY	DATE	BY	DATE	BY	DATE
				DRAWN		CHECKED		APPROVED	

SCALE	NONE
DRAWN BY	TAG
INITIAL CHK.	
FINAL CHK.	
ENGR.	
APPR. BY	
AFE/WO No.	NONE
DATE	11-16-10

Bloomfield Products Terminal Plot Plan

Western Refining
BLOOMFIELD
NEW MEXICO

DWG. NO. NONE
REV. A

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

Glycol Dehydrator Calculations: The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

Road Calculations: Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

Significant Figures:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least 5 significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;

(2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**

(3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.

(4) The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device

regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

Boiler (B-502A)
The boiler B-502A combusts natural gas. Most criteria pollutant emissions are calculated based on the heat input rating and manufacturer's emissions factors for natural gas combustion. SO_2 emissions are calculated using the pipeline natural gas specification of 50 gr Total Sulfur/Mscf. HAP emissions are calculated using AP-42 Tables 1.4-2, 1.4-3 and 1.4-4 and Ventura County AB 2588 Combustion Emission Factors (May 2001).

Truck Loading Rack (TLR-1) with Vapor Recovery Unit (VRU)
At the terminal, gasoline and diesel fuel is transferred by loading rack from storage tanks to trucks. In addition, gasoline, diesel, crude, ethanol, and naphtha is transferred via loading rack or via soft pipe elsewhere in the facility from trucks to storage tanks. Emissions from gasoline loading are controlled by a Vapor Recovery Unit (VRU), which is limited to 0.083 lb/1000-gal of gasoline loaded.

VOC emissions from loading are calculated using U.S. EPA AP-42 Section 5.2. HAP/TAP emissions are calculated based on the approximate HAP/TAP speciation profile for each product loaded. The emission factors, emission calculations, and a detailed sample calculation, are included in this Section.

Unloading VOC and HAP/TAP emissions from hose disconnects are also calculated at the anticipated unloading rates.

Fugitives (F-1)
Fugitive VOC emissions for each remaining functional area are calculated based on fitting counts provided by the facility. Fugitive HAP/TAP emissions are calculated based on fugitive VOC emissions and the approximate HAP/TAP speciation for each functional area. The emission factors, emission calculations, a detailed description of the fugitive VOC emission calculation procedure, and a detailed sample calculation, are included in this section.

Tank Emissions (EG-1)
Tank working and breathing losses are calculated using the Tanks 4.0.9d program. The calculations were completed using the highest vapor pressure liquid that would be stored in the tank. The detailed reports containing the tank parameters, stored liquid and meteorological data are included in Section 7 (Due to the large quantity of these TANKs reports, Western has only included them in the electronic .pdf version of this application.)

Tank flashing emissions were not calculated because flashing emissions are not expected from these tanks. The materials are transferred and stored at atmospheric conditions. Therefore, there is no mechanism for generating flash emissions.

API Separator (API)
The VOC emissions for the API separator are calculated using Section 5.1 of AP-42. Detailed calculations are shown in this section. The HAP emissions are calculated based on API VOC emissions and the HAP speciation of the wastewater. The calculations for these emissions are provided in this section.

Emergency Fire Water Pumps (P-521, P-521A, and P-526)

The emergency fire water pump, P-521 operates using a 400-hp diesel engine. Controlled emissions were calculated based on an operation time of 500 hours per year. Emissions for CO, NOx, VOC, SO2 and PM emissions were calculated using manufacture emission factors. HAP emissions were calculating using AP-42 emission factors for uncontrolled diesel engines.

The emergency fire pumps, P-521A and P-526, operate using a 380-bhp and 460-bhp diesel engine, respectively. Controlled emissions were calculated based on an operation time of 500 hours per year. Engine emission were calculated using AP-42 emission factors for uncontrolled diesel engines.

Benzene Strippers (S-1, S-2)
The VOC emissions for the benzene strippers are calculated from the VOC concentration of the wastewater. The HAP emissions are calculated from the HAP concentration of the wastewater. The air emissions from the benzene strippers are based on the efficiency of stripping the VOCs and HAPs from the wastewater. Detailed calculations are provided in this section.

SSM
Estimates were made for the activities listed below. For VOCs, Western requested the 10 tpy allowed for SSM/Malfunction per paragraph 2.e) of "Implementation Guidance for Permitting SSM Emissions and Excess Emissions" document issued 10 January 2011. For other pollutants, Western provides SSM emissions estimates in this section.

SSM activities for facility operating as a bulk terminal

- ***Abrasive Blasting Emissions.**** Emissions from abrasive blasting performed on storage tanks.
- ***Temporary Equipment Emissions.*** Emissions from temporary equipment used at the terminal for maintenance.
- ***Tank Emptying and Degassing Emissions.*** Emissions from degassing storage tanks in preparation for cleaning, internal inspection, or maintenance.
- ***Tank Cleaning Emissions.*** Emissions generated during the cleaning of storage tanks.
- ***Tank Refilling Emissions.*** Emissions generated during the refilling of storage tanks following cleaning.
- ***Tank Surface Coating Emissions.**** Emissions generated during the application of surface coatings to storage tanks.
- ***Routine Surface Coating Emissions.*** Emissions generated during routine surface coating activities throughout the terminal.
- ***Solvent Usage Emissions.*** Emissions from solvents used to clean surface coating equipment and to prepare surfaces for the application of coatings.
- ***Boiler Startup Emissions.*** Emissions generated during boiler startup conditions, which are not greater than permit allowables for normal operation.

*Please note that these activities are primarily conducted on the inside of the storage tanks.

Section 6.a
Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO_2e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO_2e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO_2e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO2e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following ☑ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at http://www.epa.gov/ttn/chief/ap42/index.html
- EPA's Internet emission factor database WebFIRE at http://cfpub.epa.gov/webfire/
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases:

Global Warming Potentials (GWP):
Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO_2 over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC).** You may also find GHGs defined in 40 CFR 86.1818-12(a).

Metric to Short Ton Conversion:
Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.
1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

Green house gas emissions are included in this section.

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Boiler Data

Source ID	Source Name	Maximum Operating Rate (MMBtu/hr)	Average Operating Rate (MMBtu/hr)	Fuel Heating Value (MMBtu/MMscf)	Hourly Fuel Usauge (MMscf/hr)	Annual Fuel Usage (MMscf/yr)
B-502A	Boiler	12.6	12.6	1000	0.013	110.4

Boiler Emission Factors [1,2]

Source ID	Source Name	PM (lb/MMBtu)	NOx (lb/MMBtu)	CO (lb/MMBtu)	VOC (lb/MMBtu)	SO_2 (lb/MMBtu)
B-502A	Boiler	1.00E-02	0.035	0.15	0.016	0.014

[1] B-502A: NOx, CO, VOC, PM lb/MMBtu emission factors based on manufacturer's data

[2] SO_2 emission factor based on 50 gr Total Sulfur/Mscf pipeline specification for natural gas

Sample Calculation - SO_2 Emission Factor

Hourly Emissions: $\frac{50 \text{ gr S}}{\text{Mscf}} \times \frac{\text{lb S}}{7000 \text{ gr}} \times \frac{1000 \text{ Mscf}}{\text{MMscf}} \times \frac{\text{MMscf}}{1000 \text{ MMBtu}} \times \frac{64.06 \text{ lb } SO_2}{32.065 \text{ lb S}} = \frac{1.43\text{E-}02 \text{ lb}}{\text{MMBtu}}$

Hourly Emissions for Existing Boiler

Source ID	Source Name	PM (lb/hr)	NOx (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)
B-502A	Boiler	0.13	0.44	1.89	0.20	0.18

Sample Calculation - B-502A, NOx

Hourly Emissions: $\frac{3.50\text{E-}02 \text{ lb}}{\text{MMBtu}} \times \frac{12.60 \text{ MMBtu}}{\text{hr}} = \frac{4.41\text{E-}01 \text{ lb}}{\text{hr}}$

Annual Emissions for Existing Boiler

Source ID	Source Name	PM (tpy)	NOx (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
B-502A	Boiler	0.55	1.93	8.28	0.88	0.79

Sample Calculation - B-502A, NOx

Annual Emissions: $\frac{0.04 \text{ MMBtu}}{\text{hr}} \times \frac{12.6 \text{ hr}}{\text{yr}} \times \frac{8{,}760 \text{ hrs}}{\text{yr}} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{1.93 \text{ ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Boiler Data

Source ID	Source Name	Maximum Operating Rate (MMBtu/hr)	Average Operating Rate (MMBtu/hr)	Fuel Heating Value (MMBtu/MMscf)	Hourly Fuel Usauge (MMscf/hr)	Annual Fuel Usage (MMscf/yr)
B-502A	Boiler	12.6	12.6	1000	0.013	110.4

HAP Emission Factors

		HAPs Defined in Section 112 (b) of Clean Air Act												TAPs Listed in 20.2.72.502 NMAC				
Source ID	Source Name	Benzene (lb/MMscf)	Dichlorobenzene (lb/MMscf)	Formaldehyde (lb/MMscf)	n-Hexane (lb/MMscf)	Naphthalene (lb/MMscf)	Toluene (lb/MMscf)	Arsenic (lb/MMscf)	Cadmium (lb/MMscf)	Chromium (lb/MMscf)	Lead (lb/MMscf)	Manganese (lb/MMscf)	Mercury (lb/MMscf)	Nickel (lb/MMscf)	Barium (lb/MMscf)	Copper (lb/MMscf)	Molybdenum (lb/MMscf)	Vanadium (lb/MMscf)	Zinc (lb/MMscf)
B-502A	Boiler	2.10E-03	1.20E-03	7.50E-02	6.30E-03	6.10E-04	3.40E-03	2.00E-04	1.10E-03	1.40E-03	5.00E-04	3.80E-04	2.60E-04	2.10E-03	4.40E-03	8.50E-04	1.10E-03	2.30E-03	2.90E-02

[1] Except for n-hexane, emission factors for other organic HAPs and metal HAPs are obtained from Tables 1.4-3 and 1.4-4 of U.S. EPA AP-42, Section 1.4 (External Combustion Sources), July 1998.
Emission factors for n-hexane are obtained from Ventura County AB 2588 Combustion Emission Factors, May 2001. The emission factor for the external combustion equipment with lowest heat rating is used as conservative measure.
Emission factors for lead are obtained from Table 1.4-2 of U.S. EPA AP-42, Section 1.4 (External Combustion Sources), July 1998.

[2] Only compounds with emission factors larger than 10^{-4} were included in the analysis. Non-volatile organic compounds and simple asphyxiants were also excluded.

Hourly HAP Emissions

		HAPs Defined in Section 112 (b) of Clean Air Act												TAPs Listed in 20.2.72.502 NMAC					
Source ID	Source Name	Benzene (lb/hr)	Dichlorobenzene (lb/hr)	Formaldehyde (lb/hr)	n-Hexane (lb/hr)	Naphthalene (lb/hr)	Toluene (lb/hr)	Arsenic (lb/hr)	Cadmium (lb/hr)	Chromium (lb/hr)	Lead (lb/hr)	Manganese (lb/hr)	Mercury (lb/hr)	Nickel (lb/hr)	Barium (lb/hr)	Copper (lb/hr)	Molybdenum (lb/hr)	Vanadium (lb/hr)	Zinc (lb/hr)	Total HAP Emissions (lb/hr)
B-502A	Boiler	2.65E-05	1.51E-05	9.45E-04	7.94E-05	7.69E-06	4.28E-05	2.52E-06	1.39E-05	1.76E-05	6.30E-06	4.79E-06	3.28E-06	2.65E-05	5.54E-05	1.07E-05	1.39E-05	2.90E-05	3.65E-04	***0.0012***

Sample Calculation - B-502, Benzene

Hourly Emissions: (Emission Factor) x (Hourly Operating Rate/Fuel Heating Value)

Hourly Emissions: $\frac{\text{2.10E-03 lb}}{\text{MMscf}} \times \frac{\text{12.6 MMBtu}}{\text{hr}} \times \frac{\text{MMscf}}{\text{1000 MMBtu}} = \frac{\text{2.65E-05 lb}}{\text{hr}}$

Annual HAP Emissions

		HAPs Defined in Section 112 (b) of Clean Air Act													
Source ID	Source Name	Benzene (tpy)	Dichlorobenzene (tpy)	Formaldehyde (tpy)	n-Hexane (tpy)	Naphthalene (tpy)	Toluene (tpy)	Arsenic (tpy)	Cadmium (tpy)	Chromium (tpy)	Lead (tpy)	Manganese (tpy)	Mercury (tpy)	Nickel (tpy)	Total HAP Emissions (tpy)
B-502A	Boiler	1.16E-04	6.62E-05	4.14E-03	3.48E-04	3.37E-05	1.88E-04	1.10E-05	6.07E-05	7.73E-05	2.76E-05	2.10E-05	1.43E-05	1.16E-04	***0.0052***

Sample Calculation - B-502, Benzene

Annual Emissions: (Emission Factor) x (Hourly Operating Rate/Fuel Heating Value) x (8760 hrs/yr) x (ton/2000 lbs)

Annual Emissions: $\frac{\text{2.10E-03 lb}}{\text{MMscf}} \times \frac{\text{12.6 MMBtu}}{\text{hr}} \times \frac{\text{MMscf}}{\text{1000 MMBtu}} \times \frac{\text{8,760 hrs}}{\text{yr}} \times \frac{\text{ton}}{\text{2,000 lbs}} = \frac{\text{1.16E-04 ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Boiler GHG Calculation

40 CFR 98 Subpart C TIER 1
Emission unit(s): B-502A
Source description: Natural gas-fired boiler
Annual fuel usage: 110.38 MMscf/yr

CO_2 Calculation[1] (Eq C-1)
Click here to view Table C-1 to Subpart C of Part 98.

$$CO_2 = 1 \times 10^{-3} \times \frac{110.38 \text{ MMscf}}{\text{yr}} \times \frac{1000 \text{ MMbtu}}{\text{MMscf}} \times \frac{53.06 \text{ kg } CO_2}{\text{MMbtu}}$$

CO_2 = 5857 tonnes CO_2 / yr
CO_2 = 6456 ton CO_2 / yr

Fuel Usage provided by Western.

CH_4 Calculation[2] (Eq C-8)
Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$CH_4 = 1 \times 10^{-3} \times \frac{110.38 \text{ MMscf}}{\text{yr}} \times \frac{1000 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-3} \text{ kg } CH_4}{\text{MMbtu}}$$

CH_4 = 0.11 tonnes CH_4 / yr
CH_4 = 0.12 ton CH_4 / yr

N_2O Calculation[3] (Eq C-8)
Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$N_2O = 1 \times 10^{-3} \times \frac{110.38 \text{ MMscf}}{\text{yr}} \times \frac{1000 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-4} \text{ kg } N_2O}{\text{MMbtu}}$$

N_2O = 0.011 tonnes N_2O / yr
N_2O = 0.012 ton N_2O / yr

CO_2e = 6462.40 ton CO_2e/yr

Note:
[1] Global warming potential of CO_2 is: 1
[2] Global warming potential of CH_4 is. 25
[3] Global warming potential of N_2O is 298

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Materials Transferred

Material Transferred	Material Type	Loading or Unloading	Control Device
Gasoline	Liquid	Both	None
#1 Diesel	Liquid	Both	None
#2 Diesel	Liquid	Both	None
Naphtha	Liquid	Unloading	None
Ethanol	Liquid	Unloading	None
Crude	Liquid	Unloading	None

Liquid Loading Losses[1,2,3,4]

Source ID	Material Transferred	Vapor Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Saturation Factor [1]	Average Temperature (°R)	Loading Loss [2,3] ($lb/10^3$ gal)	Control Device	Control Efficiency [4] (%)	Collection Efficiency (%)	Annual Throughput (bbl/yr)	Annual Uncaptured Loading Emissions (tpy)
LL-RAG	Rack Avg. Gasoline	68	5.2	1.45	512	0.083	None	0.0%	0.0%	3,467,500	907.45
LL-D1	#1 Diesel	130	0.0071	1.45	512	0.033	None	0.0%	0.0%	3,467,500	2.37
LL-D2	#2 Diesel	130	0.0058	1.45	512	0.03	None	0.0%	0.0%	3,467,500	1.94
									Total Liquid Loading Loss Emissions		911.76

[a] Vapor Molecular Weight, True Vapor Pressure and Average Temperature acquired from TANKS database for Bloomfield Refinery.
[b] Annual throughput obtained from 2009 NSR application for Bloomfield Refinery.
[1] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids, Table 5.2-1.
[2] Per MACT CC, operation of the Vapor Recovery Unit (VRU) at the Truck Loading Rack should limit VOC emissions to 10 mg of VOC / liter (0.083 $lb/10^3$ gal) of gasoline loaded. Facility requests this limit stay despite MACT CC no longer being applicable.
[3] Per methodology described in U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.
[4] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.
Vapor recovery efficiency is assumed to be 95%
Vapor collection efficiency (MACT CC requirement) is assumed to be 99.2%

Sample Calculation - Diesel

Loading Loss: $\frac{12.46 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{130 \text{ lb}}{\text{lb-mole}} \times \frac{0.01 \text{ psia}}{} \times 1.45 \times \frac{}{512 \text{ °R}} = \frac{2.66\text{E-}02 \text{ lb}}{10^3 \text{ gal}}$

Annual Uncaptured Emissions: Unloading Losses for Liquids: $\frac{0.027 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}467{,}500 \text{ bbl}}{\text{yr}} \times \frac{42 \text{ gal}}{\text{bbl}} \times \frac{100\% - 00.0\%}{} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{1.94 \text{ ton}}{\text{yr}}$

Liquid Unloading Losses (Hose Disconnect Fugitive Emissions)

Source ID	Material Transferred	Loading or Unloading	Soft Hose Diameter (in)	Soft Hose Length (ft)	Soft Hose Overpressure (psig)	Depressurived Volume[1] (ft^3/truck)	Gas Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Annual Throughput (bbl/yr)	Fugitive Emissions (lb/truck)	Annual VOC Emissions[2] (tpy)
UL-C	Crude	Unloading	4	6	1	0.56	60	4.5	6,935,000	0.03	0.48
UL-RAG	Rack Avg. Gasoline	Unloading	4	6	1	0.56	68	5.2	3,467,500	0.03	3.16E-01
UL-Naphtha	Naphtha	Unloading	4	6	1	0.56	75	0.5	1,460,000	3.63E-03	1.39E-02
UL-Ethanol	Ethanol	Unloading	4	6	1	0.56	46.1	0.7	1,460,000	3.40E-03	1.30E-02
UL-D1	#1 Diesel	Unloading	4	6	1	0.56	130	0.0071	3,467,500	9.11E-05	8.27E-04
UL-D2	#2 Diesel	Unloading	4	6	1	0.56	130	0.0058	3,467,500	7.44E-05	6.76E-04
									Total Fugitive Emissions		0.83

[1] The hose will be capped as soon as it is disconnected from the truck. It is assumed, all of the vapor from the soft hose is released (worst case emissions).
The vapor area released is calculated by taking the volume of the hose multiplied by the pressure fraction released. The entire volume of the hose is assumed to be released.
Ex. (Diameter^2 x Pi ÷ 4) x [Hose length x (psig ÷ 14.7 psi)/14.7]
[2] Annual emissions are based on the annual throughput and the number of trucks necessary to deliver the annual amount of material. The number of trucks is based on the truck capcaity (i.e., 8,000 gallons)

Sample Calculation - Crude

Depressurized Volume: $\frac{8.73\text{E-}02 \text{ square ft}}{} \times \frac{6 \text{ ft}}{} \times \frac{(1 \text{ psig} + 14.7 \text{ psia})}{14.7 \text{ psia}} = \frac{0.56 \text{ cubic ft}}{\text{truck}}$

Unloading Emissions: $\frac{0.56 \text{ cubic ft}}{\text{truck}} \times \frac{\text{lb-mol}}{379.41 \text{ cubic ft}} \times \frac{60 \text{ lb}}{\text{lb-mol}} \times \frac{4.47 \text{ psia}}{} \times \frac{}{14.7 \text{ psia}} = \frac{2.65\text{E-}02 \text{ lb}}{\text{truck}}$

Annual Emission: $\frac{2.65\text{E-}02 \text{ lb}}{\text{truck}} \times \frac{6{,}935{,}000 \text{ bbl}}{\text{yr}} \times \frac{\text{truck}}{191 \text{ bbl}} \times \frac{\text{ton}}{2000 \text{ lb}} = \frac{0.48 \text{ ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Materials Transferred

Material Transferred	Material Type	Loading or Unloading	Control Device
Gasoline	Liquid	Both	VRU
#1 Diesel	Liquid	Both	
#2 Diesel	Liquid	Both	
Naphtha	Liquid	Unloading	
Ethanol	Liquid	Unloading	
Crude	Liquid	Unloading	

Liquid Loading Losses[1,2,3,4]

Source ID	Material Transferred	Vapor Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Saturation Factor [1]	Average Temperature (°R)	Loading Loss [2,3] ($lb/10^3$ gal)	Control Device	Control Efficiency [4] (%)	Collection Efficiency (%)	Annual Throughput (bbl/yr)	Annual Controlled Loading Emissions (tpy)	Annual Uncaptured Loading Emissions (tpy)	Total Annual Loading Emissions (tpy)
LL-RAG	Rack Avg. Gasoline	68	5.2	1.45	512	0.083	VRU	94.2%	99.2%	3,467,500	6.04	7.26	13.30
LL-D1	#1 Diesel	130	0.0071	1.45	512	0.033		0.0%	0.0%	3,467,500	0.00	2.37	2.37
LL-D2	#2 Diesel	130	0.0058	1.45	512	0.03		0.0%	0.0%	3,467,500	0.00	1.94	1.94
										Total Liquid Loading Loss Emissions	6.04	11.57	17.61

[a] Vapor Molecular Weight, True Vapor Pressure and Average Temperature acquired from TANKS database for Bloomfield Refinery.
[b] Annual throughput obtained from 2009 NSR application for Bloomfield Refinery.
[1] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids, Table 5.2-1.
[2] Per MACT CC, operation of the Vapor Recovery Unit (VRU) at the Truck Loading Rack should limit VOC emissions to 10 mg of VOC / liter (0.083 lb/1$\hat{0}$ gal) of gasoline loaded. Facility requests this limit stay despite MACT CC no longer being applicable.
[3] Per methodology described in U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.
[4] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.
Vapor recovery efficiency is assumed to be 95%
Vapor collection efficiency (MACT CC requirement) is assumed to be 99.2%

Sample Calculation - Diesel

Loading Loss: $\frac{12.46 \text{ lb}}{\text{lb-mole}} \times \frac{130 \text{ lb-mole}}{0.01 \text{ psia}} \times \frac{1.45}{512 \text{ °R}} = \frac{2.66\text{E-}02 \text{ lb}}{10^3 \text{ gal}}$

Annual Controlled Emissions: $\frac{0.027 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}467{,}500 \text{ bbl}}{\text{yr}} \times \frac{42 \text{ gal}}{\text{bbl}} \times \frac{100\% - 00.00\%}{} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{0.00 \text{ ton}}{\text{yr}}$
Unloading Losses for Liquids

Annual Uncaptured Emissions: $\frac{0.027 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}467{,}500 \text{ bbl}}{\text{yr}} \times \frac{42 \text{ gal}}{\text{bbl}} \times \frac{100\% - 00.0\%}{} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{1.94 \text{ ton}}{\text{yr}}$
Liquid Unloading Losses (Hose Disconnect Fugitive Emissions)

Liquid Unloading Losses (Hose Disconnect Fugitive Emissions)

Source ID	Material Transferred	Loading or Unloading	Soft Hose Diameter (in)	Soft Hose Length (ft)	Soft Hose Overpressure (psig)	Depressurived Volume[1] (ft^3/truck)	Gas Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Annual Throughput (bbl/yr)	Fugitive Emissions (lb/truck)	Annual VOC Emissions[2] (tpy)
UL-C	Crude	Unloading	4	6	1	0.56	60	4.5	6,935,000	0.03	0.48
UL-RAG	Rack Avg. Gasoline	Unloading	4	6	1	0.56	68	5.2	3,467,500	0.03	3.16E-01
UL-Naphtha	Naphtha	Unloading	4	6	1	0.56	75	0.5	1,460,000	3.63E-03	1.39E-02
UL-Ethanol	Ethanol	Unloading	4	6	1	0.56	46.1	0.7	1,460,000	3.40E-03	1.30E-02
UL-D1	#1 Diesel	Unloading	4	6	1	0.56	130	0.0071	3,467,500	9.11E-05	8.27E-04
UL-D2	#2 Diesel	Unloading	4	6	1	0.56	130	0.0058	3,467,500	7.44E-05	6.76E-04
										Total Fugitive Emissions	0.83

[1] The hose will be capped as soon as it is disconnected from the truck. It is assumed, all of the vapor from the soft hose is released (worst case emissions).
The vapor area released is calculated by taking the volume of the hose multiplied by the pressure fraction released. The entire volume of the hose is assumed to be released.
Ex. (Diameter^2 x Pi ÷ 4) x [Hose length x (psig ÷ 14.7 psi)/14.7]
[2] Annual emissions are based on the annual throughput and the number of trucks necessary to deliver the annual amount of material. The number of trucks is based on the truck capacity (i.e., 8,000 gallons)

Sample Calculation - Crude

Depressurized Volume: $\frac{8.73\text{E-}02 \text{ square ft}}{} \times \frac{6 \text{ ft}}{} \times \frac{(1 \text{ psig} + 14.7 \text{ psia})}{14.7 \text{ psia}} = \frac{0.56 \text{ cubic ft}}{\text{truck}}$

Unloading Emissions: $\frac{0.56 \text{ cubic ft}}{\text{truck}} \times \frac{\text{lb-mol}}{379.41 \text{ cubic ft}} \times \frac{60 \text{ lb}}{\text{lb-mol}} \times \frac{4.47 \text{ psia}}{14.7 \text{ psia}} = \frac{2.65\text{E-}02 \text{ lb}}{\text{truck}}$

Annual Emission: $\frac{2.65\text{E-}02 \text{ lb}}{\text{truck}} \times \frac{6{,}935{,}000 \text{ bbl}}{\text{yr}} \times \frac{\text{truck}}{191 \text{ bbl}} \times \frac{\text{ton}}{2000 \text{ lb}} = \frac{0.48 \text{ ton}}{\text{yr}}$
Vapor Phase HAP Speciation

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Materials Transferred

Source ID	Material Transferred	Loading or Unloading	Vapor Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Saturation Factor [1]	Average Temperature (°R)	Loading Loss [2,3] ($lb/10^3$ gal)	Control Efficiency [4] (%)	Collection Efficiency (%)	Annual Throughput (bbl/yr)	Annual Controlled Loading Emissions (tpy)	Annual Uncaptured Loading Emissions (tpy)	Total Annual Loading Emissions (tpy)
LL-RAG	Rack Avg. Gasoline	Loading	68	5.2	1.45	512	0.083	94.24%	99.2%	3,467,500	6.04	7.26	13.30
LL-D1	#1 Diesel	Loading	130	0.0071	1.45	512	0.033	0.00%	0.0%	3,467,500	0.00	2.37	2.37
LL-D2	#2 Diesel	Loading	130	0.0058	1.45	512	0.03	0%	0.0%	3,467,500	0.00	1.94	1.94
Liquid Loading Losses[1,2,3,4]								**Total Liquid Loading Loss Emissions from Truck Rack**			6.04	9.63	17.61

[1] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids, Table 5.2-1.

[2] Per MACT CC operation of the Vapor Recovery Unit (VRU) at the Truck Loading Rack should limit VOC emissions to 10 mg of VOC / liter (0.083 $lb/10^3$ gal) of gasoline loaded. Facility requests this limit stay despite MACT CC no longer being applicable.

[3] Per methodology described in U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.

[4] Per U.S. EPA AP-42 Section 5.2 Transportation And Marketing Of Petroleum Liquids.

Vapor recovery efficiency is assumed to be 95%

Vapor collection efficiency (MACT CC requirement) is assumed to be 99.2%

Sample Calculation - Diesel

Loading Loss: $\frac{12.46 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{130 \text{ lb}}{\text{lb-mole}} \times \frac{0.01 \text{ psia}}{} \times \frac{1.45}{} \times \frac{}{512 \text{ °R}} = \frac{0.03 \text{ lb}}{10^3 \text{ gal}}$

Annual Controlled Emissions: $\frac{0.03 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}467{,}500 \text{ bbl}}{\text{yr}} \times \frac{42 \text{ gal}}{\text{bbl}} \times \frac{100\% - 00.00\%}{} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{0.00 \text{ ton}}{\text{yr}}$

Annual Uncaptured Emissions: $\frac{0.03 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}467{,}500 \text{ bbl}}{\text{yr}} \times \frac{42 \text{ gal}}{\text{bbl}} \times \frac{100\% - 00.0\%}{} \times \frac{\text{ton}}{2{,}000 \text{ lbs}} = \frac{2.37 \text{ ton}}{\text{yr}}$

Unloading Losses for Liquids

Source ID	Material Transferred	Loading or Unloading	Soft Hose Diameter (in)	Soft Hose Length (ft)	Soft Hose Overpressure (psig)	Depressurived Volume[1] (ft^3/truck)	Gas Molecular Weight (lb/lb-mole)	True Vapor Pressure (psia)	Annual Throughput (bbl/yr)	Unloading Emissions (lb/truck)	Hourly VOC Emissions[2] (lb/hr)	Annual VOC Emissions[3] (tpy)
UL-C	Crude	Unloading	4	6	1	0.56	60	4.5	6,935,000	0.03	0.16	0.48
UL-RAG	Rack Avg. Gasoline	Unloading	4	6	1	0.56	68	5.19	3,467,500	0.03	0.21	3.16E-01
UL-Naphtha	Naphtha	Unloading	4	6	1	0.56	75	0.5	1,460,000	3.63E-03	0.02	1.39E-02
UL-Ethanol	Ethanol	Unloading	4	6	1	0.56	46.1	0.7	1,460,000	3.40E-03	0.02	1.30E-02
UL-D1	#1 Diesel	Unloading	4	6	1	0.56	130	0.0071	3,467,500	9.11E-05	5.47E-04	8.27E-04
UL-D2	#2 Diesel	Unloading	4	6	1	0.56	130	0.0058	3,467,500	7.44E-05	4.47E-04	6.76E-04
									Total Fugitive Emissions			0.83

[1] The hose will be capped as soon as it is disconnected from the truck. It is assumed, all of the vapor from the soft hose is released (worst case emissions).

[2] It is assumed that the facility can unload 6 trucks per hour.

[3] Annual emissions are based on the annual throughput and the number of trucks necessary to deliver the annual amount of material. The number of trucks is based on the truck capcaity (i.e., 8,000 gallons)

Sample Calculation - Crude

Depressurized Volume: $\frac{8.73\text{E-}02 \text{ square ft}}{} \times \frac{6 \text{ ft}}{} \times \frac{(1 \text{ psig} + 14.7 \text{ psia})}{14.7 \text{ psia}} = \frac{0.56 \text{ cubic ft}}{\text{truck}}$

Unloading Emissions: $\frac{0.56 \text{ cubic ft}}{\text{truck}} \times \frac{\text{lb-mol}}{385.4 \text{ cubic ft}} \times \frac{60 \text{ lb}}{\text{lb-mol}} \times \frac{4.47 \text{ psia}}{14.7 \text{ psia}} = \frac{2.65\text{E-}02 \text{ lb}}{\text{truck}}$

Hourly Emissions $\frac{2.65\text{E-}02 \text{ lb}}{\text{truck}} \times \frac{6 \text{ trucks}}{\text{hr}} = \frac{1.59\text{E-}01 \text{ lb}}{\text{hr}}$

Annual Emission: $\frac{2.65\text{E-}02 \text{ lb}}{\text{truck}} \times \frac{6{,}935{,}000 \text{ bbl}}{\text{yr}} \times \frac{\text{truck}}{191 \text{ bbl}} \times \frac{\text{ton}}{2000 \text{ lb}} = \frac{0.48 \text{ ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Vapor Phase HAP Speciation

Source ID	Material Transferred	HAPs Defined in Section 112 (b) of Clean Air Act									TAPs Listed in 20.2.72.502 NMAC	
		2,2,4-Trimethylpentane (ppmw)	Benzene (ppmw)	Cumene (ppmw)	Ethylbenzene (ppmw)	n-Hexane (ppmw)	Naphthalene (ppmw)	PAC (ppmw)	Toluene (ppmw)	Xylene (ppmw)	1,2,4-Trimethylbenzene (ppmw)	Cyclohexane (ppmw)
LL-RAG, UL-RAG	Rack Avg. Gasoline	3,100	5,300	10	200	9,600	20	0	4,500	1,100	100	2,600
LL-D1, UL-D1	#1 Diesel	0	0	600	900	100	5,600	0	1,200	6,000	10,700	0
UL-N	Naphtha	0	19,500	0	2,400	112,200	0	0	37,700	12,800	600	73,400
UL-E	Ethanol	0	900	100	400	1,800	0	0	2,600	2,300	1,000	1,100
LL-D2, UL-D2	#2 Diesel	100	0	200	200	15	1,300	0	800	2,800	4,600	500
UL-C	Crude	300	3,500	0	200	24,200	0	0	2,900	800	100	9,900

Annual HAP Emissions

Source ID	Material Transferred	HAPs Defined in Section 112 (b) of Clean Air Act									Total HAPs (tpy)
		2,2,4-Trimethylpentane (tpy)	Benzene (tpy)	Cumene (tpy)	Ethylbenzene (tpy)	n-Hexane (tpy)	Naphthalene (tpy)	PAC (tpy)	Toluene (tpy)	Xylene (tpy)	
LL-RAG											
UL-RAG	Rack Avg. Gasoline	4.22E-02	7.22E-02	1.36E-04	2.72E-03	1.31E-01	2.72E-04	0.00E+00	6.13E-02	1.50E-02	3.25E-01
LL-D1											
UL-D1	#1 Diesel	0.00E+00	0.00E+00	1.42E-03	2.14E-03	2.37E-04	1.33E-02	0.00E+00	2.85E-03	1.42E-02	3.42E-02
UL-N	Naphtha	0.00E+00	2.70E-04	0.00E+00	3.33E-05	1.56E-03	0.00E+00	0.00E+00	5.23E-04	1.77E-04	2.56E-03
UL-E	Ethanol	0.00E+00	1.17E-05	1.30E-06	5.20E-06	2.34E-05	0.00E+00	0.00E+00	3.38E-05	2.99E-05	1.05E-04
LL-D2											
UL D2	#2 Diesel	1.94E-04	0.00	3.88E-04	3.88E-04	2.91E-05	2.52E-03	0.00E+00	1.55E-03	5.43E-03	1.05E-02
UL-C	Crude	1.44E-04	1.68E-03	0.00E+00	9.61E-05	1.16E-02	0.00E+00	0.00E+00	1.39E-03	3.84E-04	1.53E-02
Truck Rack	***Total***	***4.24E-02***	***7.25E-02***	***1.95E-03***	***5.29E-03***	***1.33E-01***	***1.61E-02***	***0.00E+00***	***6.62E-02***	***3.49E-02***	***3.72E-01***

Sample Calculation - Benzene from Crude Unloading Loading(Assuming crude vapor is 100% VOCs)

Annual Emissions: $\frac{0.48 \text{ ton VOC}}{\text{yr}} \left| \frac{1 \text{ ton crude Vapor}}{1 \text{ ton VOC}} \right| \frac{3{,}500 \text{ ppmw benzene}}{\text{crude Vapor}} \left| \frac{1}{10^6 \text{ ppmw}} \right. = \frac{1.68\text{E-}03 \text{ ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

TABLE A-1 VOC EMISSION FACTORS

Component Type	Service	Normal[3] Leak Rate (kg/hr/source)	Normal Leak Rate (lb/hr/source)	Leaky[3] Leak Rate (kg/hr/source)	Leaky Leak Rate (lb/hr/source)	Emission Factor Source
Valve[1]	Gas	0.00024	0.00052	0.01230	0.02706	EPA Protocol For Equipment Leak Emission Estimates, Table 2-10
	Light Liquid	0.00024	0.00052	0.01230	0.02706	EPA Protocol For Equipment Leak Emission Estimates, Table 2-10
	Heavy Liquid	0.00023	0.00051	0.00023	0.00051	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
Open-ended Lines	Gas	0.0023	0.00506	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
	Light Liquid	0.0023	0.00506	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
	Heavy Liquid	0.0023	0.00506	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
Flanges	Gas	0.00025	0.00056	-	-	AP-42, 4th Ed., Table 9.1-2
	Light Liquid	0.00025	0.00056	-	-	AP-42, 4th Ed., Table 9.1-2
	Heavy Liquid	0.00025	0.00056	-	-	AP-42, 4th Ed., Table 9.1-2
Pumps[2]	Light Liquid	0.00519	0.01142	0.05644	0.12416	EPA Protocol For Equipment Leak Emission Estimates, Table 2-10
	Heavy Liquid	0.00519	0.01142	0.05644	0.12416	EPA Protocol For Equipment Leak Emission Estimates, Table 2-10
Compressors	Gas	0.63636	1.40000	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
Process Drains	Light Liquid	0.03182	0.07000	-	-	AP-42, 4th Ed., Table 9.1-2
	Heavy Liquid	0.03182	0.07000	-	-	AP-42, 4th Ed., Table 9.1-2
Connectors	Gas	0.00025	0.00055	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
	Light Liquid	0.00025	0.00055	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
	Heavy Liquid	0.00025	0.00055	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2
Pressure Relief Valve	Gas	0.16000	0.35200	-	-	EPA Protocol For Equipment Leak Emission Estimates, Table 2-2

	Normal	Leaky	
[1] Valve Screening Level	500	100,000	ppm
[2] Pump Screening Level	2,000	100,000	ppm
[3] Percentage of Components	98%	2%	

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

TABLE A-2 COMPONENTS AND EMISSIONS BY UNIT / SERVICE / COMPONENT

Component quantities as reported in the most recent LDAR Report complemented by TRI Fugitives worksheet [1, 3]

	Gas / Vapor				Light Liquid					Heavy Liquid				
Unit	Valves	Compress.	PRV[5]	Connect[3]	Valves	Pumps[2]	PRV[5]	Drains	Connect[3]	Valves	Pumps	PRV[5]	Drains	Connect[3]
Truck Loading	96			288	711	27			2214		1			3
Tank Farm				0	821	25			2538		1			3
Plant wide (not otherwise given)				0					0					0
Total Components	96	0	0	288	1,532	52	0	0	4,752	0	2	0	0	6

Emissions by Unit Service / Component, lbs/hr

	Gas / Vapor				Light Liquid					Heavy Liquid				
Unit	Valves	Compress.	PRV[5]	Connect[4]	Valves	Pumps[2]	PRV[5]	Drains	Connect[4]	Valves	Pumps	PRV[5]	Drains	Connect[4]
Truck Loading	0.10	0.00	0.00	0.16	0.75	0.37	0.00	0.00	1.24	0.00	0.01	0.00	0.00	0.00
Tank Farm	0.00	0.00	0.00	0.00	0.86	0.34	0.00	0.00	1.42	0.00	0.01	0.00	0.00	0.00
Plant wide (not otherwise given)	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

[1] Based on component information provided in email correspondence from client on 10/24/2008 (Jim Lieb) and 10/30/2008 (Kelly Robinson).

[2] Includes agitators. Per EPA Protocol For Equipment Leak Emission Estimates, Table 2-2, footnote c, agitator emissions may be estimated using light liquid service pump factors.

[3] The number of flanges and connectors is estimated by a mulipicative factor applied to (# valves + # pumps/compressors + # PRV + # drains).

Flange and connector factor: 3.0

[4] The emission factors for flanges and connectors are the same for all services. The values shown in the "Emission Factors" sheet are used to calculate the emission rates.

[5] All pressure relief valves are vented back to the process (not to atmosphere) and are not included in either the component counts or in the emission rates.

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Table A-3 TOTAL VOC FUGITIVE EMISSIONS

Functional Unit	Total Fugitive Emissions	
	VOC	
	(lb/hr)	(tpy)
Truck Loading	2.63	11.53
Tank Farm	2.64	11.57
Plant wide	0.00	0.00
Total	**5.27**	**23.10**
Total with 2% Safety Factor	**-**	**23.56**

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Table A-4. Total Fugitive VOC Emissions

Functional Unit	Total Fugitive Emissions VOC (lb/hr)	(tpy)
Truck Loading	2.63	11.53
Tank Farm	2.64	11.57
Other Plant Sources	0.00	0.00
Total	**5.27**	**23.10**
Total with 2% Safety Factor	**-**	**23.56**

Table A-5. Representative Stream for Each Process Unit/Area

Functional Unit	Feed/Intermediate/Product HAP Speciation Used	HAP Speciation Basis
Truck Loading	Gasoline/#1 Diesel/#2 Diesel	MAX (Regular Gasoline, Premium Gasoline, #1 Diesel, #2 Diesel)
Tank Farm	Crude/Gasoline	AVERAGE(Crude, Regular Gasoline, Premium Gasoline)
Other Plant Sources	Crude/Gasoline	AVERAGE(Crude, Regular Gasoline, Premium Gasoline)

Table A-6. Stream HAP Speciation

Process Stream	HAPs Defined in Section 112 (b) of Clean Air Act													TAPs Listed in 20.2.72.502 NMAC			
	2,2,4-Trimethylpentane (ppmw)	Benzene (ppmw)	Cumene (ppmw)	Ethylbenzene (ppmw)	n-Hexane (ppmw)	Naphthalene (ppmw)	PAC (ppmw)	Toluene (ppmw)	Xylene (ppmw)	Arsenic (ppmw)	Lead (ppmw)	Mercury (ppmw)	Nickel (ppmw)	1,2,4-Trimethylbenzene (ppmw)	Cyclohexane (ppmw)	Copper (ppmw)	Vanadium (ppmw)
Regular Gasoline	2,900	16,800	400	8,000	41,200	1,300	25	55,100	58,500	0	0.010	0.00030	0	14,900	18,000	0	0
Premium Gasoline	0	30,400	1,200	21,100	27,700	2,300	25	137,400	137,800	0	0.010	0.00032	0	29,000	8,700	0	0
#1 Diesel	900	0	400	500	100	5,600	25	900	5,600	0	0.010	0.00052	0	10,500	200	0	0
#2 Diesel	1,200	0	200	300	0	3,000	50	700	3,800	0	0.15	0.0011	0	5,800	100	0	0
Crude	500	5,300	600	3,200	22,200	1,100	30	15,800	14,200	0	0.29	0.016	0.40	4,600	14,400	0.10	1.50
Regular Gasoline	2900	16,800	400	8,000	41,200	1,300	25	55,100	58,500	0	0.01	0.000	0.00	14,900	18,000	0.00	0.00
Premium Gasoline	0	30,400	1,200	21,100	27,700	2,300	25	137,400	137,800	0	0.010	0.00032	0	29,000	8,700	0	0

Table A-7. Representative Stream HAP Speciation

Process Stream	HAPs Defined in Section 112 (b) of Clean Air Act													TAPs Listed in 20.2.72.502 NMAC			
	2,2,4-Trimethylpentane (ppmw)	Benzene (ppmw)	Cumene (ppmw)	Ethylbenzene (ppmw)	n-Hexane (ppmw)	Naphthalene (ppmw)	PAC (ppmw)	Toluene (ppmw)	Xylene (ppmw)	Arsenic (ppmw)	Lead (ppmw)	Mercury (ppmw)	Nickel (ppmw)	1,2,4-Trimethylbenzene (ppmw)	Cyclohexane (ppmw)	Copper (ppmw)	Vanadium (ppmw)
Gasoline/#1 Diesel/#2 Diesel	2,900	30,400	1,200	21,100	41,200	5,600	50	137,400	137,800	0	0.15	0.0011	0	29,000	18,000	0	0
Crude/Gasoline	1,133	17,500	733	10,767	30,367	1,567	27	69,433	70,167	0	0.10	0.0056	0.13	16,167	13,700	0.03	0.50
Crude/Gasoline	1,133	17,500	733	10,767	30,367	1,567	27	69,433	70,167	0	0.10	0.0056	0.13	16,167	13,700	0.03	0.50

Sample Calculation

Benzene Content in Gasoline/#1 Diesel/#2 Diesel: MAX(16,800, 30,400, 0, 0) ppmw = 30,400 ppmw

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Table A-8. Hourly HAP Emissions from Fugitives

Functional Unit	HAPs Defined in Section 112 (b) of Clean Air Act													TAPs Listed in 20.2.72.502 NMAC				Total HAP
	2,2,4-Trimethylpentane (lb/hr)	Benzene (lb/hr)	Cumene (lb/hr)	Ethylbenzene (lb/hr)	n-Hexane (lb/hr)	Naphthalene (lb/hr)	PAC (lb/hr)	Toluene (lb/hr)	Xylene (lb/hr)	Arsenic (lb/hr)	Lead (lb/hr)	Mercury (lb/hr)	Nickel (lb/hr)	1,2,4-Trimethylbenzene (lb/hr)	Cyclohexane (lb/hr)	Copper (lb/hr)	Vanadium (lb/hr)	Emissions (lb/hr)
Truck Loading	7.64E-03	8.01E-02	3.16E-03	5.56E-02	1.08E-01	1.47E-02	1.32E-04	3.62E-01	3.63E-01	0	4.06E-07	2.92E-09	0	7.64E-02	4.74E-02	0	0	***9.94E-01***
Tank Farm	2.99E-03	4.62E-02	1.94E-03	2.84E-02	8.02E-02	4.14E-03	7.04E-05	1.83E-01	1.85E-01	0	2.69E-07	1.49E-08	3.52E-07	4.27E-02	3.62E-02	8.80E-08	1.32E-06	***5.33E-01***
Other Plant Sources	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	***0.00E+00***
Total HAP Emissions	***1.06E-02***	***1.26E-01***	***5.10E-03***	***8.40E-02***	***1.89E-01***	***1.89E-02***	***2.02E-04***	***5.45E-01***	***5.48E-01***	***0***	***6.75E-07***	***1.78E-08***	***3.52E-07***	***1.19E-01***	***8.36E-02***	***8.80E-08***	***1.32E-06***	***1.53***

Sample Calculation - Truck Loading, Benzene (Assuming vapor emitted is 100% VOCs and vapor phase speciation equals liquid phase speciation.)

$$\text{Hourly Emissions:} \quad \frac{2.63 \text{ lb VOC}}{\text{hr}} \left| \frac{\text{lb vapor}}{\text{lb VOC emitted}} \right| \frac{17{,}500 \text{ ppmw benzene}}{\text{Crude/Gasoline}} \left| \frac{1}{10^6 \text{ ppmw}} \right. = \frac{8.01\text{E-}02 \text{ lb}}{\text{hr}}$$

Table A-9. Annual HAP Emissions from Fugitives

Functional Unit	HAPs Defined in Section 112 (b) of Clean Air Act													Total HAP
	2,2,4-Trimethylpentane (tpy)	Benzene (tpy)	Cumene (tpy)	Ethylbenzene (tpy)	n-Hexane (tpy)	Naphthalene (tpy)	PAC (tpy)	Toluene (tpy)	Xylene (tpy)	Arsenic (tpy)	Lead (tpy)	Mercury (tpy)	Nickel (tpy)	Emissions (tpy)
Truck Loading	3.34E-02	3.51E-01	1.38E-02	2.43E-01	4.75E-01	6.46E-02	5.77E-04	1.58E+00	1.59E+00	0	1.78E-06	1.28E-08	0	***4.36E+00***
Tank Farm	1.31E-02	2.02E-01	8.48E-03	1.25E-01	3.51E-01	1.81E-02	3.08E-04	8.03E-01	8.12E-01	0	1.18E-06	6.52E-08	1.54E-06	***2.33E+00***
Other Plant Sources	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	***0.00E+00***
Total HAP Emissions	***4.66E-02***	***5.53E-01***	***2.23E-02***	***3.68E-01***	***8.26E-01***	***8.27E-02***	***8.85E-04***	***2.39E+00***	***2.40E+00***	***0***	***2.96E-06***	***7.80E-08***	***1.54E-06***	***6.69***

Sample Calculation - Truck Loading, Benzene (Assuming vapor emitted is 100% VOCs and vapor phase speciation equals liquid phase speciation.)

$$\text{Annual Emissions:} \quad \frac{11.53 \text{ ton VOC}}{\text{yr}} \left| \frac{\text{ton vapor}}{\text{ton VOC emitted}} \right| \frac{17{,}500 \text{ ppmw benzene}}{\text{Crude/Gasoline}} \left| \frac{1}{10^6 \text{ ppmw}} \right. = \frac{3.51\text{E-}01 \text{ ton}}{\text{yr}}$$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

API Separator VOC Emissions

Source ID	Source Name	Maximum Wastewater Flow Rate (gpm)	Average Wastewater Flow Rate (gpm)	Operation Hours (hrs)	VOC Emission Factor (lb/gal)	Hourly VOC Emissions (lb/hr)	Annual VOC Emissions (tpy)
API	API Separator	500	105	8,760	0.0002	6.00	5.52

[1] Controlled emission factor is obtained from AP-42, Section 5.1 (Petroleum Refining, January 1995), Table 5.1-2, for covered oil-water separators at refineries.

Sample Calculation

Hourly Emissions:

$$\frac{500\ \text{gal}}{\text{min}} \times \frac{60\ \text{min}}{\text{hr}} \times \frac{0.0002\ \text{lb}}{\text{gal}} = \frac{6.00\ \text{lb}}{\text{hr}}$$

Annual Emissions:

$$\frac{105\ \text{gal}}{\text{min}} \times \frac{60\ \text{min}}{\text{hr}} \times \frac{8760\ \text{hr}}{\text{yr}} \times \frac{0.0002\ \text{lb}}{\text{gal}} \times \frac{\text{ton}}{2{,}000\ \text{lbs}} = \frac{5.52\ \text{ton}}{\text{yr}}$$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Air Stripper Data

Source ID	Source Name	Influent Wastewater Speciation					Effluent Wastewater Speciation					Capacity (gpm)	Average Wastewater Flow Rate (gpm)	Operation Hours (hrs)	Wastewater Density (lb/gal)
		Benzene (ppmw)	Ethylbenzene (ppmw)	Toluene (ppmw)	Xylene (ppmw)	Other Organics (ppmw)	Benzene (ppmw)	Ethylbenzene (ppmw)	Toluene (ppmw)	Xylene (ppmw)	Other Organics (ppmw)				
S1 & S2	Air Strippers	8.10	1.40	17.00	10.00	3.08	0.0010	0.0010	0.0010	0.0010	0.67	200	105	8,760	8.34

[a] Influent and effluent wastewater BTEX contents are from *facility-provided air stripper design specifications.* Other influent and effluent organic contents (1,2,4 Trimethylbenzene, hexane, naphthalene) are from *TRI - 10-28-08 Updated Bloomfield 2007-JimsAdditionsplus fugitives.xls.*

[b] Air stripper capacity is from *NSR Permit 0402-M10* and average wastewater flowrate based on *TRI - 10-28-08 Updated Bloomfield 2007-JimsAdditionsplus fugitives.xls* (with a small safety factor).

[c] It is assumed that wastewater has the same density as water.

Annual HAP Emissions from Air Strippers

Source ID	Source Name	Benzene (tpy)	Ethylbenzene (tpy)	Toluene (tpy)	Xylene (tpy)	Other Organics (tpy)	Total VOC Emissions (tpy)
S1 & S2	Air Strippers	1.86	0.32	3.91	2.30	0.55	***8.95***

Sample Calculation - Benzene

Annual Emissions: $\frac{105\ \text{gal}}{\text{min}} \times \frac{60\ \text{min}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal}} \times \frac{(8.10 - 0.0010)\ \text{ppmw}}{10^6\ \text{ppmw}} \times \frac{8{,}760\ \text{hrs}}{\text{yr}} \times \frac{\text{ton}}{2{,}000\ \text{lbs}} = \frac{1.86\ \text{ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

API Separator VOC Emissions

Source ID	Source Name	Maximum Wastewater Flow Rate (gpm)	Average Wastewater Flow Rate (gpm)	Operation Hours (hrs)	Wastewater Density (lb/gal)	Wastewater VOC content (ppmw)	Annual Recovered Oil (gal)	Recovered Oil Density (lb/gal)	Recovered Oil VOC content (ppmw)	Recovered Oil BTEX content (ppmw)	VOC Emission Factor (lb/gal)	Hourly VOC Emissions (lb/hr)	Annual VOC Emissions (tpy)
API	API Separator	500	105	8,760	8.34	277	1,982,022	7	106,482	60,400	0.0002	6.0	5.52

[1] Controlled emission factor is obtained from AP-42, Section 5.1 (Petroleum Refining, January 1995), Table 5.1-2, for covered oil-water separators at refineries.

Stream HAP Speciation for API Separator

Stream Name	Stream Concentrations	HAPs Defined in Section 112 (b) of Clean Air Act												TAPs Listed in 20.2.72.502 NMAC			
	2,2,4-Trimethyl pentane (ppmw)	Benzene (ppmw)	Cumene (ppmw)	Ethyl benzene (ppmw)	Hexane (ppmw)	Naphthalene (ppmw)	PAC (ppmw)	Toluene (ppmw)	Xylene (mixed isomers) (ppmw)	Arsenic Compounds (ppmw)	Lead Compounds (ppmw)	Mercury Compounds (ppmw)	Nickel Compounds (ppmw)	1,2,4-Trimethyl benzene (ppmw)	Cyclo hexane (ppmw)	Copper Compounds (ppmw)	Vanadium Compounds (ppmw)
Wastewater In		34		5	1	3		63	43					9			
Wastewater Out		8		1	0.2	1		17	10					2			
Recovered Oil	8,800	5,600	500	5,400	7,400	3,100	30	23,400	26,000	0	0.29	0.00075	0	12,800	3,800	0	0

[1] The content of benzene, ethylbenzene, toluene, and xylene is based on the average of sample test data conducted between August 2008 and September 2008.

[2] The content of other HAPs is based on stream speciation profile for recovered oil.

[b] BTEX contents of API outlet wastewater are based on stripper inlet wastewater given in Table A17. Other HAPS based on TRI - 10-28-08 Updated Bloomfield.xls

[b] BTEX contents of inlet wastewater are based on Email from Jim Lieb on January 14, 2009. Other HAPs estimated using outlet wastewater concentration (found to be 4 times less than inlet concentrations for BTEX pollutants)

Wastewater Sampling Results

Sample Date	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (mg/L)	Benzene (ppmw)	Ethylbenzene (ppmw)	Toluene (ppmw)	Xylenes (ppmw)
8/27/2008	18	-	-	-	18	-	-	-
8/28/2008	28	-	-	-	28	-	-	-
9/3/2008	53	8.9	100	73	53	8.9	100	73
9/11/2008	38	1.7	25	12	38	1.7	25	12
Average	34.25	5.30	62.50	42.50	34.25	5.30	62.50	42.50

Hourly HAP Emissions from API Separator

Source ID	Sour Name	HAPs Defined in Section 112 (b) of Clean Air Act												TAPs Listed in 20.2.72.502 NMAC				Total HAP
		2,2,4-Trimethyl pentane (lb/hr)	Benzene (lb/hr)	Cumene (lb/hr)	Ethylbenzene (lb/hr)	n-Hexane (lb/hr)	Naphthalene (lb/hr)	PAC (lb/hr)	Toluene (lb/hr)	Xylene (lb/hr)	Arsenic (lb/hr)	Lead (lb/hr)	Mercury (lb/hr)	Nickel (lb/hr)	1,2,4-Trimethylbenzene (lb/hr)	Cyclohexane (lb/hr)	Copper (lb/hr)	Vanadium (lb/hr)	Emissions (lb/hr)
API	API Separator	4.96E-01	5.67E-01	2.82E-02	8.46E-02	1.43E-02	4.30E-02	1.69E-03	9.87E-01	7.05E-01	0.00E+00	1.61E-05	4.23E-08	0.00E+00	1.43E-01	2.14E-01	0.00E+00	0.00E+00	***2.93***

Sample Calculation - Benzene from Wastewater Data (Assuming benzene/VOC ratio emitted equals the benzene/VOC ratio in the wastewater feed.)

Hourly Emissions: $\frac{\text{500 gal water}}{\text{min}} \times \frac{\text{60 min}}{\text{hr}} \times \frac{\text{0002 lb VOC emitte}}{\text{gal water}} \times \frac{\text{10}^6\text{ lb Wastewater}}{\text{277 lb VOC}} \times \frac{\text{34 lb benzene}}{\text{10}^6\text{ lb Wastewater}} = \frac{\text{5.67E-01 lb}}{\text{hr}}$

Sample Calculation - Cumene from Recovered Oil Data (Assuming Cumene/VOC ratio emitted equals the Cumene/VOC ratio in the recovered oil.)

Hourly Emissions: $\frac{\text{500 gal}}{\text{min}} \times \frac{\text{60 min}}{\text{hr}} \times \frac{\text{0002 lb VOC emitte}}{\text{gal water}} \times \frac{\text{10}^6\text{ lb Recovered Oil}}{\text{106482 lb VOC}} \times \frac{\text{500 lb cumene}}{\text{0}^6\text{ lb Recovered Oil}} = \frac{\text{1.43E-02 lb}}{\text{hr}}$

Annual HAP Emissions from API Separator

Source ID	Sour Name	HAPs Defined in Section 112 (b) of Clean Air Act												Total HAP
		2,2,4-Trimethyl pentane (tpy)	Benzene (tpy)	Cumene (tpy)	Ethylbenzene (tpy)	n-Hexane (tpy)	Naphthalene (tpy)	PAC (tpy)	Toluene (tpy)	Xylene (tpy)	Arsenic (tpy)	Lead (tpy)	Mercury (tpy)	Nickel (tpy)	Emissions (tpy)
API	API Separator	4.56E-01	5.22E-01	1.46E-06	7.78E-02	1.32E-02	3.95E-02	1.55E-03	9.08E-01	6.49E-01	0.00E+00	1.48E-05	3.89E-08	0.00E+00	***2.67***

Sample Calculation - Benzene

Annual Emissions: $\frac{\text{105 gal}}{\text{min}} \times \frac{\text{60 min}}{\text{hr}} \times \frac{\text{8760 hr}}{\text{yr}} \times \frac{\text{0.0002 lb VOC emitted}}{\text{gal water}} \times \frac{\text{10}^6\text{ lb Wastewater}}{\text{277 lb VOC}} \times \frac{\text{34 lb benzene}}{\text{0}^6\text{ lb Wastewater}} = \frac{\text{5.22E-01 tons}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Air Stripper Data

		Influent Wastewater HAP Speciation					Effluent Wastewater HAP Speciation								
Source ID	**Source Name**	**Benzene (ppmw)**	**Ethylbenzene (ppmw)**	**Toluene (ppmw)**	**Xylene (ppmw)**	**Other HAPs (ppmw)**	**Benzene (ppmw)**	**Ethylbenzene (ppmw)**	**Toluene (ppmw)**	**Xylene (ppmw)**	**Other HAPs (ppmw)**	**Capacity (gpm)**	**Average Wastewater Flow Rate (gpm)**	**Operation Hours (hrs)**	**Wastewater Density (lb/gal)**
S1 & S2	Air Strippers	8.10	1.40	17.00	10.00	0.88	0.001	0.001	0.001	0.0010	0.34	200	105	8,760	8.34

Hourly HAP Emissions from Air Strippers

		HAPs Defined in Section 112 (b) of Clean Air Act					Total HAP
Source ID	**Source Name**	**Benzene (lb/hr)**	**Ethylbenzene (lb/hr)**	**Toluene (lb/hr)**	**Xylene (lb/hr)**	**Other HAPs (lb/hr)**	**Emissions (lb/hr)**
S1 & S2	Air Strippers	0.81	0.14	1.70	1.00	0.05	***3.71***

Sample Calculation - Benzene

Hourly Emissions: $\frac{200\ \text{gal}}{\text{min}} \times \frac{60\ \text{min}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal}} \times \frac{(8.10 - 0.0010)\ \text{ppmw}}{10^6\ \text{ppmw}} = \frac{0.81\ \text{lb}}{\text{hr}}$

Annual HAP Emissions from Air Strippers

		HAPs Defined in Section 112 (b) of Clean Air Act					Total HAP
Source ID	**Source Name**	**Benzene (tpy)**	**Ethylbenzene (tpy)**	**Toluene (tpy)**	**Xylene (tpy)**	**Other HAPs (tpy)**	**Emissions (tpy)**
S1 & S2	Air Strippers	1.86	0.32	3.91	2.30	0.12	***8.52***

Sample Calculation - Benzene

Annual Emissions: $\frac{105\ \text{gal}}{\text{min}} \times \frac{60\ \text{min}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal}} \times \frac{(8.10 - 0.0010)\ \text{ppmw}}{10^6\ \text{ppmw}} \times \frac{8{,}760\ \text{hrs}}{\text{yr}} \times \frac{\text{ton}}{2{,}000\ \text{lbs}} = \frac{1.86\ \text{ton}}{\text{yr}}$

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

One Fairbanks Fire Pump w/ Cummins NTA-855F 400-hp Diesel Engine

UNCONTROLLED EMISSIONS (PER): Using manufacturers data for the emission factors

Pollutant	Emis. Factor (g/hp-hr)	Engine Power (hp)	Emissions Rate (g/hr)	Grams/Pound (g/lb)	Emissions Rate (lb/hr)	Annual Operation (hrs/yr)	Annual Emissions (ton/yr)
CO	2.00	400	800	453.6	**1.76**	8760	**7.72**
NOx	12.00	400	4800	453.6	**10.58**	8760	**46.35**
VOC/HC	0.46	400	184	453.6	**0.41**	8760	**1.78**
SO_2	0.65	400	260.0	454.6	**0.57**	8761	**2.51**
PM	0.50	400	200	453.6	**0.44**	8760	**1.93**

CONTROLLED EMISSIONS: Using manufacturers data for the emission factors and emergency use potential of 500 hours per year

Pollutant	Emis. Factor (g/hp-hr)	Engine Power (hp)	Emissions Rate (g/hr)	Grams/Pound (g/lb)	Emissions Rate (lb/hr)	Annual Operation (hrs/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
CO	2.00	400	800	453.6	**1.76**	500	881.83	**0.44**
NOx	12.00	400	4800	453.6	**10.58**	500	5291.01	**2.65**
VOC/HC	0.46	400	184	453.6	**0.41**	500	202.82	**0.10**
SO_2	0.65	400	260.0	454.6	**0.57**	500	285.97	**0.14**
PM	0.50	400	200	453.6	**0.44**	500	220.46	**0.11**

UNCONTROLLED HAPS (AP-42 Emission factors)

Pollutant	Emis. Factor (lb/MMBtu)	Emis Factor (lb/hp-hr)**	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hrs/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Benzene	0.000933	0.000006531	400	0.0026	8760	22.88	0.011
Toluene	0.000409	0.000002863	400	0.0011	8760	10.03	0.0050
Xylenes	0.000285	0.000001995	400	7.98E-04	8760	6.99	0.0035
Acrolein	0.0000925	6.475E-07	400	2.59E-04	8760	2.27	0.0011
Formaldehyde	0.00118	0.00000826	400	0.0033	8760	28.94	0.014
Acetaldehyde	0.000767	0.000005369	400	0.0021	8760	18.81	0.0094
Total HAPs	**3.79E-03**	**2.65328E-05**	**400**	**0.011**	**8760**	**92.97**	**0.046**

Note: **Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.3 to convert AP-42 3.3-2 emission factors from lb/MMBtu to lb/hp-hr

CONTROLLED HAPS (AP-42 Emission factors) and potential emergency use of 500 hours per year

Pollutant	Emis. Factor (lb/MMBTU)	Emis Factor (lb/hp-hr)**	Engine Power (hp)	Emissions Rate (lb/Hr)	Annual Operation (Hrs/Yr)	Annual Emissions (lb/Yr)	Annual Emissions (Tons/Yr)
Benzene	0.000933	0.000006531	400	**0.0026**	500	1.31	**6.53E-04**
Toluene	0.000409	0.000002863	400	**0.0011**	500	0.57	**2.86E-04**
Xylenes	0.000285	0.000001995	400	**7.98E-04**	500	0.40	**2.00E-04**
Acrolein	0.0000925	6.475E-07	400	**2.59E-04**	500	0.13	**6.48E-05**
Formaldehyde	0.00118	0.00000826	400	**0.0033**	500	1.65	**8.26E-04**
Acetaldehyde	0.000767	0.000005369	400	**0.0021**	500	1.07	**5.37E-04**
Total HAP	**3.79E-03**	**2.65328E-05**	**400**	**0.011**	**500**	**5.31**	**0.0027**

Note: **Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.4 to convert AP-42 3.4-3 emission factors from lb/MMBtu to lb/hp-hr

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

One Fairbanks Fire Pump w/ Cummins KT-855-F2 380-hp Diesel Engine

UNCONTROLLED EMISSIONS (PER): Using AP-42 Table 3.3-1 for Diesel Fuel

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
CO	0.95	0.0067	380	**2.53**	8760	22136.52	**11.07**
NOx	4.41	0.031	380	**11.73**	8760	102760.06	**51.38**
TOC[1]	0.36	0.0025	380	**0.96**	8760	8388.58	**4.19**
SOx	0.29	0.0020	380	**0.77**	8760	6757.46	**3.38**
PM	0.31	0.0022	380	**0.82**	8760	7223.50	**3.61**

CONTROLLED EMISSIONS: 500 Hours of Operation per Year

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
CO	0.95	0.0067	380	**2.53**	500	1263.50	**0.63**
NOx	4.41	0.031	380	**11.73**	500	5865.30	**2.93**
TOC	0.36	0.0025	380	**0.96**	500	478.80	**0.24**
SOx	0.29	0.0020	380	**0.77**	500	385.70	**0.19**
PM	0.31	0.0022	380	**0.82**	500	412.30	**0.21**

UNCONTROLLED HAP Emissions: AP-42 Table 3.3-2 Emission Factors

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Benzene	9.33E-04	6.53E-06	380	0.0025	8760	21.74	0.011
Toluene	4.09E-04	2.86E-06	380	0.0011	8760	9.53	0.0048
Xylenes	2.85E-04	2.00E-06	380	7.58E-04	8760	6.64	0.0033
Acrolein	9.25E-05	6.48E-07	380	2.46E-04	8760	2.16	0.0011
Formaldehyde	0.0012	8.26E-06	380	0.0031	8760	27.50	0.014
Acetaldehyde	7.67E-04	5.37E-06	380	0.0020	8760	17.87	0.0089
Total HAPs	**0.0038**	**2.65328E-05**	**380**	**0.010**	**8760**	**88.32**	**0.044**

CONTROLLED HAP EMISSIONS: 500 Hours of Operation per Year

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Benzene	9.33E-04	6.53E-06	380	**0.0025**	500	1.24	**6.20E-04**
Toluene	4.09E-04	2.86E-06	380	**0.0011**	500	0.54	**2.72E-04**
Xylenes	2.85E-04	2.00E-06	380	**7.58E-04**	500	0.38	**1.90E-04**
Acrolein	9.25E-05	6.48E-07	380	**2.46E-04**	500	0.12	**6.15E-05**
Formaldehyde	0.0012	8.26E-06	380	**0.0031**	500	1.57	**7.85E-04**
Acetaldehyde	7.67E-04	5.37E-06	380	**0.0020**	500	1.02	**5.10E-04**
Total HAPs	**0.0038**	**2.65E-05**	**380**	**0.010**	**500**	**5.04**	**0.0025**

Notes: [1] The TOC emissions factor includes emissions from "exhaust" and "crankcase".
[2] Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.3 to convert AP-42 3.3-1&2 emission factors from lb/MMBtu to lb/hp-hr.

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

One Fairbanks Emergency Fire Water Pump w/ Detroit DDFP-06FH 8386F 460-bhp Diesel Engine

UNCONTROLLED EMISSIONS (PER): Using AP-42 Table 3.3-1 for Diesel Fuel

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
CO	0.95	0.0067	460	**3.06**	8760	26796.84	**13.40**
NOx	4.41	0.031	460	**14.20**	8760	124393.75	**62.20**
TOC[1]	0.36	0.0025	460	**1.16**	8760	10154.59	**5.08**
SOx	0.29	0.0020	460	**0.93**	8760	8180.09	**4.09**
PM	0.31	0.0022	460	**1.00**	8760	8744.23	**4.37**

CONTROLLED EMISSIONS: 500 Hours of Operation per Year

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
CO	0.95	0.0067	460	**3.06**	500	1529.50	**0.76**
NOx	4.41	0.031	460	**14.20**	500	7100.10	**3.55**
TOC	0.36	0.0025	460	**1.16**	500	579.60	**0.29**
SOx	0.29	0.0020	460	**0.93**	500	466.90	**0.23**
PM	0.31	0.0022	460	**1.00**	500	499.10	**0.25**

UNCONTROLLED HAP Emissions: AP-42 Table 3.3-2 Emission Factors

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Benzene	9.33E-04	6.53E-06	460	0.0030	8760	26.32	0.013
Toluene	4.09E-04	2.86E-06	460	0.0013	8760	11.54	0.0058
Xylenes	2.85E-04	2.00E-06	460	9.18E-04	8760	8.04	0.0040
Acrolein	9.25E-05	6.48E-07	460	2.98E-04	8760	2.61	0.0013
Formaldehyde	0.0012	8.26E-06	460	0.0038	8760	33.28	0.017
Acetaldehyde	7.67E-04	5.37E-06	460	0.0025	8760	21.63	0.0108
Total HAPs	**0.0038**	**2.65328E-05**	**460**	**0.012**	**8760**	**106.92**	**0.053**

CONTROLLED HAP EMISSIONS: 500 Hours of Operation per Year

Pollutant	Emis. Factor (lb/MMBtu)	Emis. Factor (lb/hp-hr)[2]	Engine Power (hp)	Emissions Rate (lb/hr)	Annual Operation (hr/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Benzene	9.33E-04	6.53E-06	460	**0.0030**	500	1.50	**7.51E-04**
Toluene	4.09E-04	2.86E-06	460	**0.0013**	500	0.66	**3.29E-04**
Xylenes	2.85E-04	2.00E-06	460	**9.18E-04**	500	0.46	**2.29E-04**
Acrolein	9.25E-05	6.48E-07	460	**2.98E-04**	500	0.15	**7.45E-05**
Formaldehyde	0.0012	8.26E-06	460	**0.0038**	500	1.90	**9.50E-04**
Acetaldehyde	7.67E-04	5.37E-06	460	**0.0025**	500	1.23	**6.17E-04**
Total HAPs	**0.0038**	**2.65E-05**	**460**	**0.012**	**500**	**6.10**	**0.0031**

Notes: [1] The TOC emissions factor includes emissions from "exhaust" and "crankcase".
[2] Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.3 to convert AP-42 3.3-1&2 emission factors from lb/MMBtu to lb/hp-hr.

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

GHG Emissions

P-521		
Total Uncontrolled Fuel Usage	183084	gallons/yr
Total Controlled Fuel Usage	10450	gallons/year
HHV	0.091	MMBtu/gal
CO_2 Emission Factor	61.46	kg CO_2/MMBtu
CH_4 Emission Factor	0.003	kg CH_4/MMBtu
NO_2 Emission Factor	0.006	kg N_2O/ MMBtu
Controlled Emissions		
Amount of CO_2	58445.4	kg CO_2/yr
Amount of CH_4	2.9	kg CH_4/yr
Amount N_2O	5.7	kg N_2O/yr
Amount of CO_2	57.52	tons CO_2/yr
Amount of CH_4	2.81E-03	tons CH_4/yr
Amount N_2O	5.62E-03	tons N_2O/yr
Total CO_2e	59.27	CO_2e/yr

P-521A		
Total Uncontrolled Fuel Usage	209676	gallons/yr
Total Controlled Fuel Usage	11968	gallons/year
HHV	0.091	MMBtu/gal
CO_2 Emission Factor	61.46	kg CO_2/MMBtu
CH_4 Emission Factor	0.003	kg CH_4/MMBtu
NO_2 Emission Factor	0.006	kg N_2O/ MMBtu
Controlled Emissions		
Amount of CO_2	66934.3	kg CO_2/yr
Amount of CH_4	3.3	kg CH_4/yr
Amount N_2O	6.5	kg N_2O/yr
Amount of CO_2	65.88	tons CO_2/yr
Amount of CH_4	3.22E-03	tons CH_4/yr
Amount N_2O	6.43E-03	tons N_2O/yr
Total CO_2e	67.87	CO_2e/yr

P-526		
Total Uncontrolled Fuel Usage	277293.9	gallons/yr
Total Controlled Fuel Usage	15827.28	gallons/year
HHV	0.091	MMBtu/gal
CO_2 Emission Factor	61.46	kg CO_2/MMBtu
CH_4 Emission Factor	0.003	kg CH_4/MMBtu
NO_2 Emission Factor	0.006	kg N_2O/ MMBtu
Controlled Emissions		
Amount of CO_2	88519.8	kg CO_2/yr
Amount of CH_4	4.3	kg CH_4/yr
Amount N_2O	8.6	kg N_2O/yr
Amount of CO_2	87.12	tons CO_2/yr
Amount of CH_4	4.25E-03	tons CH_4/yr
Amount N_2O	8.51E-03	tons N_2O/yr
Total CO_2e	89.76	CO_2e/yr

GWP[1]	
CO_2 (tons/yr)	1
CH_4 (tons/yr)	25
N_20 (tons/yr)	298

[1]GWP (Global Warming Potential) taken from 40 CFR 98

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

SSM Emissions Summary Table

	Hourly Emissions (lbs/hr)							*Annual Emissions (TPY)*						
Source	**NOx**	**SO_2**	**CO**	**PM**	**PM_{10}**	**VOC**	**H_2S**	**NOx**	**SO_2**	**CO**	**PM**	**PM_{10}**	**VOC**	**H_2S**
Vacuum Truck	--	--	--	--	--	1.53	--	--	--	--	--	--	0.79	--
Sandblasting	--	--	--	2.36	0.56	--	--	--	--	--	0.30	0.59	--	--
Surface Coating*	--	--	--	1.31	1.31	13.44	--	--	--	--	0.03	0.03	0.27	--
Tank Degassing*	--	--	--	--	--	15.37	--	--	--	--	--	--	2.21	--
Tank Cleaning*	--	--	--	--	--	0.01	--	--	--	--	--	--	0.02	--
Tank Landing and Refilling*	--	--	--	--	--	110.64	--	--	--	--	--	--	1.66	--
Boiler Startup[1]	--	--	3.53	--	--	--	--	--	--	1.77E-03	--	--	--	--
Drum Cleaning	--	--	--	--	--	0.027	--	--	--	--	--	--	4.08E-05	--
Salt Loading	--	--	--	0.35	0.35	--	--	--	--	--	5.22E-04	5.22E-04	--	--
Small Equipment	--	--	--	--	--	5.17E-04	9.42E-05	--	--	--	--	--	2.25E-04	1.17E-05
TOTALS	**0.00**	**0.00**	**3.53**		**2.22**	**141.02**	**9.42E-05**	**0.00**	**0.00**	**1.77E-03**		**0.62**	**4.95**	**1.17E-05**
Requested Allowable								**10**	**10**	**10**	**10**		**10**	**9**	

*The worst case emissions in any tank are selected

[1] Modeling not required because this value does not exceed permitted limit

Table B-4 Abrasive Usage for Tank Cleaning [1]

Maximum Usage (ton/hr)	0.2
Annual Usage (tons/yr)	50

[1] Annual usage provided by Bloomfield 11/2011.

Table B-5 Short-Term Hourly Storage Abrasive Blasting Emissions [1]

Tank Number	PM (lb/hr)	PM_{10} (lb/hr)
FixedTanks	2.36	0.56
FloatTanks	2.36	0.56

[1] Covers abrasive blasting performed on storage tanks .

Table B-6 Annual Storage Tank Abrasive Blasting Emissions [1]

Tank Number	PM (tpy)	PM_{10} (tpy)
FixedTanks	0.30	0.07
FloatTanks	0.30	0.07

[1] Covers abrasive blasting performed on storage tanks .

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Table B-7. Surface Coating Composition Data [1,2]

Application	VOC Weight Percent (wt. %)	Solids Weight Percent[2] (wt %)	Density (lb/gal)	VOC Content (lb/gal)	PM Content (lb/gal)
Standard Industrial Enamel	40	20	10.00	4.00	2.00
Cleaning Solvent	100	0	7.5	7.50	0.00
450H White Resin	20	20	13.11	2.62	2.62
450H Cure	37	20	8.60	3.18	1.72
2/400 White Resin	5	20	12.77	0.64	2.55
400 Cure	35	20	11.67	4.09	2.33
Worst Case	37	20	13.11	4.09	2.62
Tank Surface Coating Operations		20	13.11	3.50	2.62

[1] The VOC limit for tank surface coating operations is specified in 30 TAC 115.421(a)(9)(iv) (surface coating VOC limits for miscellaneous metal parts and products - high-performance coating applications).

Per the definition in 30 TAC 115.420(b)(7)(C), extreme performance coatings are defined as coatings are subject to continuous outdoor exposure, which would be the case for storage tank coatings.

[2] Per engineering judgement after internet review of typical solids content

Table B-8. Tank Surface Coating Schedule

Year	Number of Tanks to be Painted
2011	1
2012	1
2013	1

[a] Trinity conservative assumption that all tanks in service will be painted each year.

Table B-9 Surface Coating Usage Data [1,2,3]

Average Volume of Paint Used Per Tank (gal)	100
Total Estimated Volume of Paint Purchased for Routine Painting (gal/yr)	300
Approximate Solvent Usage per Amount of Paint (%)	25

[1] Approximate tank surface coating usage information was estimated by Randy Schmaltz. Estimate is based on Historic and predicted use.

[2] Total volume of coatings used in routine surface coating operations was estimated at 100 gallons per tank, 1 tanks per year.

[3] Solvent usage is assumed to be approximately 25% of coating usage on average.

EMISSIONS CALCULATION
Western Refining Southwest, Inc. & Western Refining Terminals, LLC
Bloomfield Products Terminal

Table B-10. Surface Coating Application Data [1, 2]

Transfer Efficiency (%)	80
Maximum Paint Usage for Tank Surface Coating (gal/hr)	2.5
Daily Paint Usage for Tank Surface Coating (gal/day)	20

[1] For airless application to an approximately flat surface, a transfer efficiency of 80% is obtained from Table 1 of TCEQ, *Air Permit Technical Guidance for Coatings Sources, Surface Coating Operations* , April 2001. However, as a conservative approach, the above transfer efficiency is used in the calculations based on process experience with other spray coating industries.

[2] It is conservatively assumed that the duration of time required to paint a single tank is approximately 1 week, at 8 hours per day. It is also conservatively estimated that surface coating would be applied to 1 tank in the refinery at any given time since only paint one tank per year.

Table B-11 Short-Term Hourly Tank Surface Coating Emissions [1]

Year	Tank Painting		Solvent		VOC	PM_{10}
	VOC (lb/hr)	PM_{10} (lb/hr)	VOC (lb/hr)	PM_{10} (lb/hr)	(lb/hr)	(lb/hr)
2011	8.75	1.31	4.69	-	13.44	1.31
2012	8.75	1.31	4.69	-	13.44	1.31
2013	8.75	1.31	4.69	-	13.44	1.31
Future	8.75	1.31	4.69	-	13.44	1.31

[1] The worst case VOC speciation fractions are used for emission calculations of VOC species.

Table B-12 Daily Tank Surface Coating Emissions [1]

Year	Tank Painting		Solvent		VOC	PM_{10}	VOC	PM_{10}
	VOC (lb/day)	PM_{10} (lb/day)	VOC (lb/day)	PM_{10} (lb/day)	(lb/day)	(lb/day)	(lb/hr)	(lb/hr)
2011	70.00	10.49	37.50	-	107.50	10.49	4.48	0.44
2012	70.00	10.49	37.50	-	107.50	10.49	4.48	0.44
2013	70.00	10.49	37.50	-	107.50	10.49	4.48	0.44
Future	70.00	10.49	37.50	-	107.50	10.49	4.48	0.44

[1] The worst case VOC speciation fractions are used for emission calculations of VOC species.

Table B-13. Annual Tank Surface Coating Emissions [1]

Year	Tank Painting		Solvent		VOC	PM_{10}
	VOC (tpy)	PM_{10} (tpy)	VOC (tpy)	PM_{10} (tpy)	(tpy)	(tpy)
2011	0.18	0.03	0.09	-	0.27	0.03
2012	0.18	0.03	0.09	-	0.27	0.03
2013	0.18	0.03	0.09	-	0.27	0.03
Future	0.18	0.03	0.09	-	0.27	0.03

[1] The worst case VOC speciation fractions are used for emission calculations of VOC species.

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☑ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☑ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- ☑ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

The following information was used to determine emissions for the boiler, truck loading rack/unloading operations, fugitives, storage tanks, API separator, benzene strippers, SSM, and emergency fire water pumps:

Boiler (B-502A)

- Manufacturer's estimated emissions data
- AP-42 Tables 1.4-2, 1.4-3 and 1.4-4
- Ventura County AB 2588 Combustion Emission Factors, May 2001

Truck Loading Rack (TLR-1) with Vapor Recovery Unit (VRU)

- U.S. EPA AP-42, 5th Edition, Section 5.2, *Transportation and Marketing of Petroleum Liquids*, July 2008

Fugitives (F-1)

- U.S. EPA-453 /R-95-017, *EPA Protocol for Equipment Leak Emission Estimates*, November 1995

Tank Emissions (EG-1)

- Tanks 4.0.9d

API Separator (API)

- U.S. EPA AP-42, 5th Edition, Section 5.1, *Petroleum Refining*, January 1995

Emergency Fire Water Pumps (P-521, P-521A, and P-526)

- P-521 & P-521A
  - Manufacture Exhaust Emission Data Sheet
  - U.S. EPA AP-42 5th Edition, Section 3.3, *Gasoline & Diesel Industrial Engines*, October 1995, Table 3.3-2
- P-526
  - U.S. EPA AP-42 5th Edition, Section 3.3, *Gasoline & Diesel Industrial Engines*, October 1995, Table 3.3-1
  - U.S. EPA AP-42 5th Edition, Section 3.3, *Gasoline & Diesel Industrial Engines*, October 1995, Table 3.3-2
  - Diesel Service & Supply Inc., *Approximate Fuel Consumption Chart*

Startup, Shutdown, and Maintenance (SSM)

- TCEQ, Abrasive Blast Cleaning, Guidance Document RG-169, March 2001
- TCEQ, Painting Basics and Emission Calculations for TCEQ Air Quality Permit Applications, October 2006

Estimated Emissions - HDS and HDSX Burners

The following emissions apply to all HDS and HDSX burners from 200 to 1200 hp firing the fuels shown and at the emission levels indicated.

Estimated Emission Levels Firing Natural Gas						
Pollutant		**Model HDS**	**Model HDSX**			
		NO FGR	**60 ppm**	**30 ppm**	**25 ppm**	**20 ppm**
NOx (B)	ppm	100	60	30	25	20
	lb/mmbtu	0.12	0.07	0.035	0.03	0.024
CO (A)	ppm	200	200 (A)	200 (A)	200 (A)	200 (A)
	lb/mmbtu	0.15	0.15 (A)	0.15 (A)	0.15 (A)	0.15 (A)
SOx (C)	ppm	1	1	1	1	1
	lb/mmbtu	0.001	0.001	0.001	0.001	0.001
HC / VOC	ppm	40	40	40	40	40
	lb/mmbtu	0.016	0.016	0.016	0.016	0.016
PM	ppm	na	na	na	na	na
	lb/mmbtu	0.01	0.01	0.01	0.01	0.01

Estimated Emission Levels Firing #2 Oil (D)						
Pollutant		**Model HDS**	**Model HDSX**			
		NO FGR	**60 ppm**	**30 ppm**	**25 ppm**	**20 ppm**
NOx (B)	ppm	185	185	140	140	140
	lb/mmbtu	0.25	0.25	0.176	0.176	0.176
CO (A)	ppm	90	90	90	90	90
	lb/mmbtu	0.07	0.07	0.07	0.07	0.07
SOx (C)	ppm	278	278	278	278	278
	lb/mmbtu	0.52	0.52	0.52	0.52	0.52
HC / VOC	ppm	50	60	60	60	60
	lb/mmbtu	0.025	0.03	0.03	0.03	0.03
PM	ppm	na	na	na	na	na
	lb/mmbtu	0.025	0.025	0.025	0.025	0.025

Assumption sued for above (Contact Webster if different assumptions required)

A. CO varies with firing rate. Lower levels available, contact sales.
B. The ppm levels are corrected to 3% Oxygen (15% excess air) and dry volume basis.
C. Maximum sulfur in natural gas is 0.0006% wt.
D. ASTM #2 fuel, 0.05% Nitrogen, 0.5% Sulfur and 0.01% Ash (% by weight).
E. All levels are above backround (ambient) conditions.
F. Emission levels are based on a properly maintained and tuned burner.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION[a]

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 \text{ scf}] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2×10^4 $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION[a]

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene[b, c]	2.4E-05	D
56-49-5	3-Methylchloranthrene[b, c]	<1.8E-06	E
	7,12-Dimethylbenz(a)anthracene[b,c]	<1.6E-05	E
83-32-9	Acenaphthene[b,c]	<1.8E-06	E
203-96-8	Acenaphthylene[b,c]	<1.8E-06	E
120-12-7	Anthracene[b,c]	<2.4E-06	E
56-55-3	Benz(a)anthracene[b,c]	<1.8E-06	E
71-43-2	Benzene[b]	2.1E-03	B
50-32-8	Benzo(a)pyrene[b,c]	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene[b,c]	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene[b,c]	<1.2E-06	E
207-08-9	Benzo(k)fluoranthene[b,c]	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene[b,c]	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene[b,c]	<1.2E-06	E
25321-22-6	Dichlorobenzene[b]	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene[b,c]	3.0E-06	E
86-73-7	Fluorene[b,c]	2.8E-06	E
50-00-0	Formaldehyde[b]	7.5E-02	B
110-54-3	Hexane[b]	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene[b,c]	<1.8E-06	E
91-20-3	Naphthalene[b]	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanathrene[b,c]	1.7E-05	D
74-98-6	Propane	1.6E+00	E

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION (Continued)

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
129-00-0	Pyrene[b, c]	5.0E-06	E
108-88-3	Toluene[b]	3.4E-03	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $1b/10^6$ scf to lb/MMBtu, divide by 1,020. Emission Factors preceeded with a less-than symbol are based on method detection limits.

[b] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[c] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[d] The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

TABLE 1.4-4. EMISSION FACTORS FOR METALS FROM NATURAL GAS COMBUSTION[a]

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
7440-38-2	Arsenic[b]	2.0E-04	E
7440-39-3	Barium	4.4E-03	D
7440-41-7	Beryllium[b]	<1.2E-05	E
7440-43-9	Cadmium[b]	1.1E-03	D
7440-47-3	Chromium[b]	1.4E-03	D
7440-48-4	Cobalt[b]	8.4E-05	D
7440-50-8	Copper	8.5E-04	C
7439-96-5	Manganese[b]	3.8E-04	D
7439-97-6	Mercury[b]	2.6E-04	D
7439-98-7	Molybdenum	1.1E-03	D
7440-02-0	Nickel[b]	2.1E-03	C
7782-49-2	Selenium[b]	<2.4E-05	E
7440-62-2	Vanadium	2.3E-03	D
7440-66-6	Zinc	2.9E-02	E

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. Emission factors preceeded by a less-than symbol are based on method detection limits. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by l6. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020.

[b] Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT
669 County Square Drive, Ventura CA 93003 805/ 645-1401 FAX 805/ 645-1444 www.vcapcd.org

AB 2588 COMBUSTION EMISSION FACTORS

Emission factors for combustion of natural gas and diesel fuel were developed for use in AB 2588 emission inventory reports in 1990 and updated in 1991, 1992 and 1995. These factors have been updated again based on new data available from the USEPA (1) (10).

These emission factors are to be used where source testing or fuel analysis are not required by the AB 2588 Criteria and Guidelines Regulations, Appendix D. The factors are divided into external combustion sources (boilers, heaters, flares) and internal combustion sources (engines, turbines). Natural gas combustion factors are further divided into a number of sub-categories, based on equipment size and type.

If better source specific data such as manufacturer's data, source tests, or fuel analysis is available, it should be used rather than these emission factors.

Natural Gas Combustion Factors

Natural gas combustion factors were developed for listed substances identified by the California Air Resources Board (CARB) as significant components of natural gas combustion emissions (2) and for some federal HAPs.

In the past, the VCAPCD has included emission factors for natural gas fired internal combustion equipment in this document. In 2000, the USEPA published air toxics emission factors for natural gas fired turbines and engines. For natural gas fired internal combustion equipment, the emission factors from the USEPA publication AP-42 (1) should be used.

For natural gas fired turbines, emission factors from Table 3.1-3 of AP-42, dated April 2000 should be used. For natural gas fired internal combustion engines, emission factors from Tables 3.2-1, 3.2-2, and 3.2-3 of AP-42, dated August 2000, as applicable, should be used.

Natural Gas Fired External Combustion Equipment

	<10 MMBTUh	10-100 MMBTUh	>100 MMBTUh	flare
Pollutant	Emissions (lb/MMcf)			
benzene	0.0080	0.0058	0.0017	0.159
formaldehyde	0.0170	0.0123	0.0036	1.169
PAH's (including naphthalene)	0.0004	0.0004	0.0004	0.014
naphthalene	0.0003	0.0003	0.0003	0.011
acetaldehyde	0.0043	0.0031	0.0009	0.043
acrolein	0.0027	0.0027	0.0008	0.010
propylene	0.7310	0.5300	0.01553	2.440
toluene	0.0366	0.0265	0.0078	0.058
xylenes	0.0272	0.0197	0.0058	0.029
ethyl benzene	0.0095	0.0069	0.0020	1.444
hexane	0.0063	0.0046	0.0013	0.029

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-3
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Premium Gasoline

Tank Dimensions

Diameter (ft):	41.00
Volume (gallons):	393,330.00
Turnovers:	101.70

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Liquid-mounted
Secondary Seal	Weather Shield

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	4
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	4

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format

Liquid Contents of Storage Tank

T-3 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0149	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0051	0.0102	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0029	0.0004	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0106	0.0109	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0194	0.0285	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0019	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0168	0.0044	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0434	0.0011	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0034	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0180	0.0049	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0080	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0412	0.0176	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0293	0.0008	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1098	0.2511	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0004	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0013	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0588	0.0919	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0033	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0551	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0026	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						7.3806	N/A	N/A	63.2842	0.4940	0.5726	104.04	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0585	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-3 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Rim Seal Losses (lb):	2,206.7503
Seal Factor A (lb-mole/ft-yr):	0.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	1.2000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	41.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	199.4429
Annual Net Throughput (gal/yr.):	40,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	41.0000
Roof Fitting Losses (lb):	24,267.9899
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,614.6915
Average Wind Speed (mph):	10.6000
Total Losses (lb):	26,674.1831

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	4	2.00	0.37	0.91	159.3537
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	4	0.82	0.53	0.14	56.4929

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-3 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	2,206.75	199.44	24,267.99	0.00	26,674.18
Isopentane	554.21	21.90	6,094.79	0.00	6,670.90
1-Pentene	22.42	1.02	246.60	0.00	270.04
2-Methyl-1-butene	24.07	2.11	264.73	0.00	290.91
Pentane (-n)	202.81	11.73	2,230.34	0.00	2,444.88
2-Pentene	62.87	3.87	691.36	0.00	758.09
Hexane (-n)	38.94	8.22	428.26	0.00	475.42
Benzene	9.60	3.35	105.58	0.00	118.54
Cyclohexane	10.71	3.59	117.76	0.00	132.06
2,2,4-Trimethylpentane	0.84	0.58	9.24	0.00	10.66
Toluene	8.74	10.99	96.08	0.00	115.80
Ethylbenzene	0.41	1.60	4.49	0.00	6.50
Xylene (-m)	2.48	11.67	27.31	0.00	41.47
Isopropyl benzene	0.01	0.08	0.10	0.00	0.19
1,2,4-Trimethylbenzene	0.14	2.97	1.53	0.00	4.64
Naphthalene	0.00	0.26	0.02	0.00	0.28
Propane Surrogate (Iso-C5 base)	0.19	0.66	2.07	0.00	2.91
Isobutane Surrogate(Iso-C5 base)	1.67	5.84	18.36	0.00	25.87
1-Butene Surrogate (Iso-C5 base)	0.03	0.12	0.38	0.00	0.53
Butane Surrogate (Iso-C5 base)	2.47	8.66	27.19	0.00	38.32
Trans-2-Butene Surrogate (iso-C5)	0.15	0.52	1.63	0.00	2.30

Cis-2-Butene Surrogate (Iso-C5)	0.19	0.68	2.13	0.00	3.00
3-Methyl-1-Butene Surrogate (IC5)	0.11	0.38	1.19	0.00	1.68
Propylene Surrogate (Iso-C5 base)	0.01	0.02	0.06	0.00	0.09
Isobutene Surrogate (Iso-C5 base)	0.03	0.12	0.38	0.00	0.53
Unidentified Components	1,263.64	98.52	13,896.41	0.00	15,258.57

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-4
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Premium Gasoline

Tank Dimensions

Diameter (ft):	41.00
Volume (gallons):	393,330.00
Turnovers:	101.70

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Liquid-mounted
Secondary Seal	Weather Shield

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	4
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	4

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-4 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0149	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0051	0.0102	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0029	0.0004	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0106	0.0109	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0194	0.0285	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0019	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0168	0.0044	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0434	0.0011	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0034	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0180	0.0049	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0080	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0412	0.0176	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0293	0.0008	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1098	0.2511	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0004	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0013	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0588	0.0919	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0033	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0551	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0026	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						7.3806	N/A	N/A	63.2842	0.4940	0.5726	104.04	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0585	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-4 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	2,206.7503
Seal Factor A (lb-mole/ft-yr):	0.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	1.2000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	41.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	199.4429
Annual Net Throughput (gal/yr.):	40,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	41.0000
Roof Fitting Losses (lb):	24,267.9899
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,614.6915
Average Wind Speed (mph):	10.6000
Total Losses (lb):	26,674.1831

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	4	2.00	0.37	0.91	159.3537
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	4	0.82	0.53	0.14	56.4929

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-4 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	2,206.75	199.44	24,267.99	0.00	26,674.18
Isopentane	554.21	21.90	6,094.79	0.00	6,670.90
1-Pentene	22.42	1.02	246.60	0.00	270.04
2-Methyl-1-butene	24.07	2.11	264.73	0.00	290.91
Pentane (-n)	202.81	11.73	2,230.34	0.00	2,444.88
2-Pentene	62.87	3.87	691.36	0.00	758.09
Hexane (-n)	38.94	8.22	428.26	0.00	475.42
Benzene	9.60	3.35	105.58	0.00	118.54
Cyclohexane	10.71	3.59	117.76	0.00	132.06
2,2,4-Trimethylpentane	0.84	0.58	9.24	0.00	10.66
Toluene	8.74	10.99	96.08	0.00	115.80
Ethylbenzene	0.41	1.60	4.49	0.00	6.50
Xylene (-m)	2.48	11.67	27.31	0.00	41.47
Isopropyl benzene	0.01	0.08	0.10	0.00	0.19
1,2,4-Trimethylbenzene	0.14	2.97	1.53	0.00	4.64
Naphthalene	0.00	0.26	0.02	0.00	0.28
Propane Surrogate (Iso-C5 base)	0.19	0.66	2.07	0.00	2.91
Isobutane Surrogate(Iso-C5 base)	1.67	5.84	18.36	0.00	25.87
1-Butene Surrogate (Iso-C5 base)	0.03	0.12	0.38	0.00	0.53
Butane Surrogate (Iso-C5 base)	2.47	8.66	27.19	0.00	38.32
Trans-2-Butene Surrogate (iso-C5)	0.15	0.52	1.63	0.00	2.30
Cis-2-Butene Surrogate (Iso-C5)	0.19	0.68	2.13	0.00	3.00
3-Methyl-1-Butene Surrogate (IC5)	0.11	0.38	1.19	0.00	1.68
Propylene Surrogate (Iso-C5 base)	0.01	0.02	0.06	0.00	0.09
Isobutene Surrogate (Iso-C5 base)	0.03	0.12	0.38	0.00	0.53
Unidentified Components	1,263.64	98.52	13,896.41	0.00	15,258.57

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-8
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Crude Slop

Tank Dimensions

Shell Height (ft):	25.00
Diameter (ft):	12.00
Liquid Height (ft) :	23.00
Avg. Liquid Height (ft):	12.00
Volume (gallons):	19,300.00
Turnovers:	259.07
Net Throughput(gal/yr):	5,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Diffuse
Shell Condition	Good
Roof Color/Shade:	Aluminum/Diffuse
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	1.00
Slope (ft/ft) (Cone Roof)	0.17

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-8 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	62.03	49.12	74.93	54.80	5.1104	4.0412	6.3897	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0222	0.0131	0.0364	120.1900	0.0128	0.0002	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Pentene						9.0694	6.8303	11.8536	70.1400	0.0004	0.0019	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.6313	0.4318	0.9028	114.2300	0.0088	0.0030	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						4.6625	3.5405	6.0477	70.1300	0.0013	0.0032	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
3-Methyl-1-Butene Surrogate (IC5)						0.1000	0.1000	0.1000	70.1000	0.0002	0.0000	70.10	Option 1: VP60 = .1 VP70 = .1
Benzene						1.2351	0.8568	1.7425	78.1100	0.0056	0.0037	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0033	0.0002	58.10	Option 1: VP60 = .1 VP70 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0002	0.0000	56.10	Option 1: VP60 = .1 VP70 = .1
Cyclohexane						1.2795	0.8953	1.7909	84.1600	0.0038	0.0026	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1164	0.0736	0.1792	106.1700	0.0054	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.0165	1.4312	2.7856	86.1700	0.0074	0.0079	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0009	0.0000	58.10	Option 1: VP60 = .1 VP70 = .1
Isopentane						10.5168	7.7120	13.9135	72.1500	0.0199	0.1113	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Isopropyl benzene						0.0551	0.0336	0.0877	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0027	0.0015	0.0046	128.0000	0.0031	0.0000	128.00	Option 1: VP60 = .0024 VP70 = .0037
Pentane (-n)						7.1490	5.3413	9.4346	72.1500	0.0088	0.0334	72.15	Option 3: A=27691, B=7.558
Toluene						0.3515	0.2332	0.5174	92.1300	0.0234	0.0044	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0007	0.0000	56.10	Option 1: VP60 = .1 VP70 = .1
Unidentified Components						5.7849	5.4706	5.4707	57.7067	0.8675	0.8265	186.26	
Xylene (-m)						0.0970	0.0610	0.1500	106.1700	0.0260	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-8 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	2,908.1520
Vapor Space Volume (cu ft):	1,507.9645
Vapor Density (lb/cu ft):	0.0548
Vapor Space Expansion Factor:	0.4448
Vented Vapor Saturation Factor:	0.2169
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,507.9645
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	13.3333
Tank Shell Height (ft):	25.0000
Average Liquid Height (ft):	12.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0548
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.1104
Daily Avg. Liquid Surface Temp. (deg. R):	521.6968
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	514.4700
Tank Paint Solar Absorptance (Shell):	0.6000
Tank Paint Solar Absorptance (Roof):	0.6000
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.4448
Daily Vapor Temperature Range (deg. R):	51.6288
Daily Vapor Pressure Range (psia):	2.3484
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.1104
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.0412
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.3897
Daily Avg. Liquid Surface Temp. (deg R):	521.6968
Daily Min. Liquid Surface Temp. (deg R):	508.7896
Daily Max. Liquid Surface Temp. (deg R):	534.6040
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.2169
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	5.1104
Vapor Space Outage (ft):	13.3333
Working Losses (lb):	7,733.1837
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.1104
Annual Net Throughput (gal/yr.):	5,000,000.0000
Annual Turnovers:	259.0674
Turnover Factor:	0.2825
Maximum Liquid Volume (gal):	19,300.0000
Maximum Liquid Height (ft):	23.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	0.7500
Total Losses (lb):	10,641.3357

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-8 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (Four Corners Sweet)	7,733.18	2,908.15	10,641.34
Isopentane	860.34	323.54	1,183.89
1-Pentene	14.91	5.61	20.52
2-Methyl-1-butene	24.92	9.37	34.29
Pentane (-n)	258.62	97.26	355.88
Hexane (-n)	61.34	23.07	84.41
Benzene	28.43	10.69	39.12
Cyclohexane	19.99	7.52	27.50
2,2,4-Trimethylpentane	22.84	8.59	31.43
Toluene	33.82	12.72	46.53
Ethylbenzene	2.58	0.97	3.56
Xylene (-m)	10.37	3.90	14.27
Isopropyl benzene	0.11	0.04	0.16
1,2,4-Trimethylbenzene	1.17	0.44	1.60
Naphthalene	0.03	0.01	0.05
Isobutane Surrogate(Iso-C5 base)	0.37	0.14	0.51
Butane Surrogate (Iso-C5 base)	1.36	0.51	1.87
Trans-2-Butene Surrogate (iso-C5)	0.29	0.11	0.40
Cis-2-Butene Surrogate (Iso-C5)	0.08	0.03	0.11
3-Methyl-1-Butene Surrogate (IC5)	0.08	0.03	0.11
Unidentified Components	6,391.52	2,403.61	8,795.13

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-9
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Crude Slop

Tank Dimensions

Shell Height (ft):	25.00
Diameter (ft):	12.00
Liquid Height (ft) :	23.00
Avg. Liquid Height (ft):	12.00
Volume (gallons):	19,300.00
Turnovers:	259.07
Net Throughput(gal/yr):	5,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Diffuse
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	1.00
Slope (ft/ft) (Cone Roof)	0.17

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-9 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	60.21	48.60	71.82	54.17	4.9478	4.0022	6.0602	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0206	0.0128	0.0324	120.1900	0.0128	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Pentene						8.7230	6.7504	11.1270	70.1400	0.0004	0.0019	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5993	0.4250	0.8297	114.2300	0.0088	0.0029	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						4.4894	3.5003	5.6871	70.1300	0.0013	0.0032	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
3-Methyl-1-Butene Surrogate (IC5)						0.1000	0.1000	0.1000	70.1000	0.0002	0.0000	70.10	Option 1: VP60 = .1 VP70 = .1
Benzene						1.1747	0.8439	1.6065	78.1100	0.0056	0.0036	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0033	0.0002	58.10	Option 1: VP60 = .1 VP70 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0002	0.0000	56.10	Option 1: VP60 = .1 VP70 = .1
Cyclohexane						1.2183	0.8821	1.6542	84.1600	0.0038	0.0025	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1093	0.0722	0.1619	106.1700	0.0054	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.9239	1.4109	2.5810	86.1700	0.0074	0.0078	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0009	0.0000	58.10	Option 1: VP60 = .1 VP70 = .1
Isopentane						10.0578	7.6075	13.0399	72.1500	0.0199	0.1099	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Isopropyl benzene						0.0515	0.0329	0.0786	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0024	0.0014	0.0040	128.0000	0.0031	0.0000	128.00	Option 1: VP60 = .0024 VP70 = .0037
Pentane (-n)						6.8674	5.2774	8.8344	72.1500	0.0088	0.0332	72.15	Option 3: A=27691, B=7.558
Toluene						0.3323	0.2292	0.4723	92.1300	0.0234	0.0043	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0007	0.0000	56.10	Option 1: VP60 = .1 VP70 = .1
Unidentified Components						5.6116	5.3380	5.3381	57.7409	0.8675	0.8286	186.26	
Xylene (-m)						0.0910	0.0599	0.1354	106.1700	0.0260	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-9 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	2,510.0383
Vapor Space Volume (cu ft):	1,507.9645
Vapor Density (lb/cu ft):	0.0532
Vapor Space Expansion Factor:	0.3853
Vented Vapor Saturation Factor:	0.2224
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,507.9645
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	13.3333
Tank Shell Height (ft):	25.0000
Average Liquid Height (ft):	12.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0532
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.9478
Daily Avg. Liquid Surface Temp. (deg. R):	519.8791
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.8400
Tank Paint Solar Absorptance (Shell):	0.6000
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.3853
Daily Vapor Temperature Range (deg. R):	46.4368
Daily Vapor Pressure Range (psia):	2.0580
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.9478
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.0022
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0602
Daily Avg. Liquid Surface Temp. (deg R):	519.8791
Daily Min. Liquid Surface Temp. (deg R):	508.2700
Daily Max. Liquid Surface Temp. (deg R):	531.4883
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.2224
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.9478
Vapor Space Outage (ft):	13.3333
Working Losses (lb):	7,487.0062
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.9478
Annual Net Throughput (gal/yr.):	5,000,000.0000
Annual Turnovers:	259.0674
Turnover Factor:	0.2825
Maximum Liquid Volume (gal):	19,300.0000
Maximum Liquid Height (ft):	23.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	0.7500
Total Losses (lb):	9,997.0445

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-9 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (Four Corners Sweet)	7,487.01	2,510.04	9,997.04
Isopentane	822.80	275.85	1,098.64
1-Pentene	14.34	4.81	19.15
2-Methyl-1-butene	23.99	8.04	32.04
Pentane (-n)	248.44	83.29	331.73
Hexane (-n)	58.52	19.62	78.15
Benzene	27.04	9.07	36.11
Cyclohexane	19.03	6.38	25.41
2,2,4-Trimethylpentane	21.68	7.27	28.95
Toluene	31.97	10.72	42.68
Ethylbenzene	2.43	0.81	3.24
Xylene (-m)	9.73	3.26	12.99
Isopropyl benzene	0.11	0.04	0.14
1,2,4-Trimethylbenzene	1.08	0.36	1.45
Naphthalene	0.03	0.01	0.04
Isobutane Surrogate(Iso-C5 base)	0.37	0.12	0.49
Butane Surrogate (Iso-C5 base)	1.36	0.45	1.81
Trans-2-Butene Surrogate (iso-C5)	0.29	0.10	0.38
Cis-2-Butene Surrogate (Iso-C5)	0.08	0.03	0.11
3-Methyl-1-Butene Surrogate (IC5)	0.08	0.03	0.11
Unidentified Components	6,203.63	2,079.78	8,283.42

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-11
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Reformate

Tank Dimensions

Diameter (ft):	100.00
Volume (gallons):	2,115,000.00
Turnovers:	28.37

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Liquid-mounted
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	17
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	16

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format

Liquid Contents of Storage Tank

T-11 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Reformate - Bloomfield	All	54.58	46.99	62.17	52.22	3.8677	N/A	N/A	75.0000			92.00	Option 4: RVP=8, ASTM Slope=5
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0407	0.0002	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0001	0.0002	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0003	0.0004	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0003	0.0005	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0001	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0415	0.0132	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0416	0.0013	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0014	0.0005	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0284	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0298	0.0157	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0232	0.0007	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0416	0.1169	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0012	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0003	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0340	0.0653	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0081	0.0003	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.1920	0.0169	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0003	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						9.6378	N/A	N/A	75.0802	0.3471	0.7631	104.39	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.1677	0.0040	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-11 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Rim Seal Losses (lb):	1,115.3731
Seal Factor A (lb-mole/ft-yr):	0.3000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.6000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	0.3000
Value of Vapor Pressure Function:	0.0980
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.8677
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	75.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	129.3257
Annual Net Throughput (gal/yr.):	60,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.4000
Tank Diameter (ft):	100.0000
Roof Fitting Losses (lb):	19,752.5077
Value of Vapor Pressure Function:	0.0980
Vapor Molecular Weight (lb/lb-mole):	75.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,688.7513
Average Wind Speed (mph):	10.6000
Total Losses (lb):	20,997.2066

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	11.7542
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	462.5234
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	103.5480
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	18,455.2883
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	4.4794
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	17	2.00	0.37	0.91	536.0551
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	16	0.82	0.53	0.14	178.8594

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-11 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Reformate - Bloomfield	1,115.37	129.33	19,752.51	0.00	20,997.21
Isopentane	130.37	5.38	2,308.68	0.00	2,444.42
1-Pentene	0.27	0.01	4.83	0.00	5.12
2-Methyl-1-butene	0.42	0.04	7.49	0.00	7.95
Pentane (-n)	72.81	4.40	1,289.40	0.00	1,366.60
2-Pentene	0.60	0.04	10.69	0.00	11.33
Hexane (-n)	17.49	3.85	309.70	0.00	331.04
Benzene	14.72	5.37	260.77	0.00	280.86
Cyclohexane	0.52	0.18	9.16	0.00	9.86
Toluene	18.90	24.83	334.72	0.00	378.45
Ethylbenzene	0.90	3.67	15.95	0.00	20.52
Xylene (-m)	4.42	21.69	78.29	0.00	104.39
Isopropyl benzene	0.02	0.16	0.31	0.00	0.49
1,2,4-Trimethylbenzene	0.24	5.26	4.18	0.00	9.68
Naphthalene	0.00	0.04	0.00	0.00	0.04
Propane Surrogate (Iso-C5 base)	0.29	1.05	5.07	0.00	6.41
Isobutane Surrogate(Iso-C5 base)	0.82	3.00	14.53	0.00	18.36
1-Butene Surrogate (Iso-C5 base)	0.01	0.03	0.13	0.00	0.16
Butane Surrogate (Iso-C5 base)	1.47	5.38	26.06	0.00	32.91
Trans-2-Butene Surrogate (iso-C5)	0.01	0.04	0.19	0.00	0.24
Cis-2-Butene Surrogate (Iso-C5)	0.00	0.01	0.06	0.00	0.08
3-Methyl-1-Butene Surrogate (IC5)	0.00	0.01	0.06	0.00	0.08
Unidentified Components	851.09	44.89	15,072.24	0.00	15,968.21

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-12
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	100.00
Volume (gallons):	2,115,000.00
Turnovers:	33.10

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Liquid-mounted
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	17
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	16

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format

Liquid Contents of Storage Tank

T-12 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0223	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0020	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0101	0.0201	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0051	0.0007	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0161	0.0166	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0212	0.0311	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0021	0.0001	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0057	0.0015	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0078	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0046	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0053	0.0014	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0068	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0087	0.0037	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0018	0.0000	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0014	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0848	0.1940	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0007	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0020	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0147	0.0230	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0245	0.0018	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0033	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						5.4572	N/A	N/A	65.0678	0.7058	0.7045	91.85	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0430	0.0008	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-12 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	1,409.1652
Seal Factor A (lb-mole/ft-yr):	0.3000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.6000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	0.3000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	143.1003
Annual Net Throughput (gal/yr.):	70,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	100.0000
Roof Fitting Losses (lb):	24,955.3682
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,688.7513
Average Wind Speed (mph):	10.6000
Total Losses (lb):	26,507.6337

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	17	2.00	0.37	0.91	677.2534
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	16	0.82	0.53	0.14	225.9715

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-12 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	1,409.17	143.10	24,955.37	0.00	26,507.63
Isopentane	273.33	12.13	4,840.41	0.00	5,125.87
1-Pentene	28.36	1.45	502.20	0.00	532.00
2-Methyl-1-butene	23.35	2.30	413.47	0.00	439.13
Pentane (-n)	32.38	2.10	573.38	0.00	607.86
2-Pentene	43.87	3.03	776.90	0.00	823.81
Hexane (-n)	5.25	1.24	92.99	0.00	99.49
Benzene	2.08	0.82	36.84	0.00	39.73
Cyclohexane	2.01	0.76	35.66	0.00	38.43
2,2,4-Trimethylpentane	0.94	0.73	16.71	0.00	18.39
Toluene	2.48	3.51	43.93	0.00	49.92
Ethylbenzene	0.22	0.97	3.93	0.00	5.12
Xylene (-m)	1.17	6.15	20.65	0.00	27.96
Isopropyl benzene	0.01	0.10	0.19	0.00	0.30
1,2,4-Trimethylbenzene	0.13	3.19	2.36	0.00	5.68
Naphthalene	0.00	0.29	0.02	0.00	0.31
Propylene Surrogate (Iso-C5 base)	0.00	0.01	0.06	0.00	0.08
Propane Surrogate (Iso-C5 base)	0.00	0.01	0.06	0.00	0.08
Isobutane Surrogate(Iso-C5 base)	0.07	0.26	1.16	0.00	1.48
Isobutene Surrogate (Iso-C5 base)	0.05	0.20	0.90	0.00	1.15
1-Butene Surrogate (Iso-C5 base)	0.07	0.29	1.29	0.00	1.65

Butane Surrogate (Iso-C5 base)	0.28	1.12	5.03	0.00	6.43
Trans-2-Butene Surrogate (iso-C5)	0.12	0.47	2.13	0.00	2.72
Cis-2-Butene Surrogate (Iso-C5)	0.17	0.66	2.96	0.00	3.79
3-Methyl-1-Butene Surrogate (IC5)	0.08	0.30	1.35	0.00	1.73
Unidentified Components	992.74	101.00	17,580.78	0.00	18,674.52

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-13
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	67.00
Volume (gallons):	1,161,000.00
Turnovers:	34.45

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Liquid-mounted
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	13
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	9

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format

Liquid Contents of Storage Tank

T-13 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0149	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0051	0.0102	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0029	0.0004	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0106	0.0109	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0194	0.0285	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0019	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0168	0.0044	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0434	0.0011	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0034	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0180	0.0049	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0080	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0412	0.0176	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0293	0.0008	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1098	0.2511	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0004	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0013	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0588	0.0919	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0033	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0551	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0026	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						7.3806	N/A	N/A	63.2842	0.4940	0.5726	104.04	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0585	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-13 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	944.1407
Seal Factor A (lb-mole/ft-yr):	0.3000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.6000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	0.3000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	67.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	122.0471
Annual Net Throughput (gal/yr.):	40,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	67.0000
Roof Fitting Losses (lb):	24,697.1519
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,660.9305
Average Wind Speed (mph):	10.6000
Total Losses (lb):	25,763.3398

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	13	2.00	0.37	0.91	517.8996
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	9	0.82	0.53	0.14	127.1089

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-13 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	944.14	122.05	24,697.15	0.00	25,763.34
Isopentane	237.12	13.40	6,202.57	0.00	6,453.09
1-Pentene	9.59	0.62	250.96	0.00	261.18
2-Methyl-1-butene	10.30	1.29	269.41	0.00	281.00
Pentane (-n)	86.77	7.18	2,269.78	0.00	2,363.73
2-Pentene	26.90	2.37	703.58	0.00	732.85
Hexane (-n)	16.66	5.03	435.83	0.00	457.52
Benzene	4.11	2.05	107.45	0.00	113.61
Cyclohexane	4.58	2.20	119.85	0.00	126.62
2,2,4-Trimethylpentane	0.36	0.35	9.40	0.00	10.12
Toluene	3.74	6.72	97.78	0.00	108.24
Ethylbenzene	0.17	0.98	4.57	0.00	5.72
Xylene (-m)	1.06	7.14	27.80	0.00	36.00
Isopropyl benzene	0.00	0.05	0.11	0.00	0.16
1,2,4-Trimethylbenzene	0.06	1.82	1.56	0.00	3.44
Naphthalene	0.00	0.16	0.02	0.00	0.18
Propane Surrogate (Iso-C5 base)	0.08	0.40	2.10	0.00	2.59
Isobutane Surrogate(Iso-C5 base)	0.71	3.58	18.68	0.00	22.97
1-Butene Surrogate (Iso-C5 base)	0.01	0.07	0.38	0.00	0.47
Butane Surrogate (Iso-C5 base)	1.06	5.30	27.67	0.00	34.03
Trans-2-Butene Surrogate (iso-C5)	0.06	0.32	1.66	0.00	2.04

Cis-2-Butene Surrogate (Iso-C5)	0.08	0.41	2.17	0.00	2.67
3-Methyl-1-Butene Surrogate (IC5)	0.05	0.23	1.21	0.00	1.49
Propylene Surrogate (Iso-C5 base)	0.00	0.01	0.06	0.00	0.08
Isobutene Surrogate (Iso-C5 base)	0.01	0.07	0.38	0.00	0.47
Unidentified Components	540.64	60.29	14,142.16	0.00	14,743.09

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-14
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	67.00
Volume (gallons):	1,160,000.00
Turnovers:	34.48

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	13
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	9
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format

Liquid Contents of Storage Tank

T-14 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0149	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0051	0.0102	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0029	0.0004	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0106	0.0109	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0194	0.0285	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0019	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0168	0.0044	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0434	0.0011	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0034	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0180	0.0049	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0080	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0412	0.0176	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0293	0.0008	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0006	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1098	0.2511	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0004	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0013	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0588	0.0919	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0033	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0551	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0026	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						7.3806	N/A	N/A	63.2842	0.4940	0.5726	104.04	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0585	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-14 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Rim Seal Losses (lb):	3,009.7714
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	67.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	122.0471
Annual Net Throughput (gal/yr.):	40,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	67.0000
Roof Fitting Losses (lb):	24,710.6285
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,662.3825
Average Wind Speed (mph):	10.6000
Total Losses (lb):	27,842.4470

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	13	2.00	0.37	0.91	517.8996
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	9	0.82	0.53	0.14	127.1089
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	13.4766

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-14 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	3,009.77	122.05	24,710.63	0.00	27,842.45
Isopentane	755.89	13.40	6,205.95	0.00	6,975.25
1-Pentene	30.58	0.62	251.10	0.00	282.30
2-Methyl-1-butene	32.83	1.29	269.56	0.00	303.68
Pentane (-n)	276.61	7.18	2,271.02	0.00	2,554.81
2-Pentene	85.74	2.37	703.97	0.00	792.08
Hexane (-n)	53.11	5.03	436.07	0.00	494.21
Benzene	13.09	2.05	107.51	0.00	122.66
Cyclohexane	14.61	2.20	119.91	0.00	136.71
2,2,4-Trimethylpentane	1.15	0.35	9.41	0.00	10.91
Toluene	11.92	6.72	97.83	0.00	116.47
Ethylbenzene	0.56	0.98	4.58	0.00	6.11
Xylene (-m)	3.39	7.14	27.81	0.00	38.34
Isopropyl benzene	0.01	0.05	0.11	0.00	0.17
1,2,4-Trimethylbenzene	0.19	1.82	1.56	0.00	3.57
Naphthalene	0.00	0.16	0.02	0.00	0.18
Propane Surrogate (Iso-C5 base)	0.26	0.40	2.11	0.00	2.76
Isobutane Surrogate(Iso-C5 base)	2.28	3.58	18.69	0.00	24.55
1-Butene Surrogate (Iso-C5 base)	0.05	0.07	0.38	0.00	0.50
Butane Surrogate (Iso-C5 base)	3.37	5.30	27.69	0.00	36.36
Trans-2-Butene Surrogate (iso-C5)	0.20	0.32	1.66	0.00	2.18

Cis-2-Butene Surrogate (Iso-C5)	0.26	0.41	2.17	0.00	2.85
3-Methyl-1-Butene Surrogate (IC5)	0.15	0.23	1.21	0.00	1.59
Propylene Surrogate (Iso-C5 base)	0.01	0.01	0.06	0.00	0.08
Isobutene Surrogate (Iso-C5 base)	0.05	0.07	0.38	0.00	0.50
Unidentified Components	1,723.46	60.29	14,149.88	0.00	15,933.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-18
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Diesel

Tank Dimensions

Diameter (ft):	100.00
Volume (gallons):	2,115,000.00
Turnovers:	23.64
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	32
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d

Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-18 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Diesel (#2) - Bloomfield	All	54.58	46.99	62.17	52.22	0.0058	N/A	N/A	130.0000			205.00	Option 1: VP50 = .0045 VP60 = .0074
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0105	0.0466	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0009	0.1238	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0002	0.0565	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0005	0.0121	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0001	0.0449	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0004	0.0045	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0056	0.0029	128.00	Option 1: VP50 = .0015 VP60 = .0024
Toluene						0.2783	N/A	N/A	92.1300	0.0009	0.0678	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0024	N/A	N/A	172.8110	0.9753	0.5281	209.07	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0056	0.1129	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-18 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	10.6688
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0001
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	117.7066
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	50,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.9900
Tank Diameter (ft):	100.0000
Deck Fitting Losses (lb):	5.1115
Value of Vapor Pressure Function:	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	321.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Total Losses (lb):	133.4869

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	0.5732
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	0.2229
Roof Leg or Hanger Well/Adjustable	32	7.90	0.00	0.00	4.0255
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	0.1911
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	0.0987

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-18 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Diesel (#2) - Bloomfield	10.67	117.71	5.11	0.00	133.49
Hexane (-n)	0.48	0.01	0.23	0.00	0.72
Cyclohexane	0.60	0.02	0.29	0.00	0.92
2,2,4-Trimethylpentane	1.32	0.11	0.63	0.00	2.06
Toluene	0.72	0.11	0.35	0.00	1.18
Ethylbenzene	0.13	0.06	0.06	0.00	0.25
Xylene (-m)	1.20	0.66	0.58	0.00	2.44
Isopropyl benzene	0.05	0.05	0.02	0.00	0.12
1,2,4-Trimethylbenzene	0.50	1.24	0.24	0.00	1.97
Naphthalene	0.03	0.66	0.01	0.00	0.70
Unidentified Components	5.63	114.80	2.70	0.00	123.13

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-19
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Diesel

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	81.00
Liquid Height (ft) :	39.00
Avg. Liquid Height (ft):	20.00
Volume (gallons):	1,485,000.00
Turnovers:	43.77
Net Throughput(gal/yr):	65,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	2.00
Slope (ft/ft) (Cone Roof)	0.05

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-19 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Diesel (#2) - Bloomfield	All	54.58	46.99	62.17	52.22	0.0058	0.0040	0.0077	130.0000			205.00	Option 1: VP50 = .0045 VP60 = .0074
1,2,4-Trimethylbenzene						0.0164	0.0119	0.0223	120.1900	0.0058	0.0257	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	0.4046	0.6340	114.2300	0.0012	0.1651	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane						1.0441	0.8423	1.2845	84.1600	0.0001	0.0282	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	0.0680	0.1170	106.1700	0.0003	0.0073	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene						0.0416	0.0309	0.0554	120.2000	0.0002	0.0023	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	0.0013	0.0027	128.0000	0.0030	0.0016	128.00	Option 1: VP50 = .0015 VP60 = .0024
Toluene						0.2783	0.2174	0.3531	92.1300	0.0007	0.0527	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0034	0.0026	0.0026	148.8120	0.9849	0.6405	207.49	
Xylene (-m)						0.0745	0.0564	0.0975	106.1700	0.0038	0.0766	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-19 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	288.0766
Vapor Space Volume (cu ft):	106,495.2784
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0543
Vented Vapor Saturation Factor:	0.9937
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	106,495.2784
Tank Diameter (ft):	81.0000
Vapor Space Outage (ft):	20.6667
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	20.0000
Roof Outage (ft):	0.6667
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.6667
Roof Height (ft):	2.0000
Roof Slope (ft/ft):	0.0500
Shell Radius (ft):	40.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Daily Avg. Liquid Surface Temp. (deg. R):	514.2529
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0543
Daily Vapor Temperature Range (deg. R):	30.3662
Daily Vapor Pressure Range (psia):	0.0037
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0077
Daily Avg. Liquid Surface Temp. (deg R):	514.2529
Daily Min. Liquid Surface Temp. (deg R):	506.6614
Daily Max. Liquid Surface Temp. (deg R):	521.8445
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9937
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0058
Vapor Space Outage (ft):	20.6667
Working Losses (lb):	999.2429
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Annual Net Throughput (gal/yr.):	65,000,000.0000
Annual Turnovers:	43.7710
Turnover Factor:	0.8521
Maximum Liquid Volume (gal):	1,485,000.0000
Maximum Liquid Height (ft):	39.0000
Tank Diameter (ft):	81.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	1,287.3196

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-19 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Diesel (#2) - Bloomfield	999.24	288.08	1,287.32
Cyclohexane	28.23	8.14	36.36
2,2,4-Trimethylpentane	164.97	47.56	212.54
Toluene	52.66	15.18	67.84
Ethylbenzene	7.27	2.10	9.37
Xylene (-m)	76.54	22.07	98.61
Isopropyl benzene	2.25	0.65	2.90
1,2,4-Trimethylbenzene	25.71	7.41	33.12
Naphthalene	1.55	0.45	2.00
Unidentified Components	640.06	184.53	824.59

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-20_Edit
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	60.00
Volume (gallons):	840,000.00
Turnovers:	3.57
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	17
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-20_Edit - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0104	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.0030	N/A	N/A	78.1100	0.0066	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0240	0.0065	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0083	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0234	0.0100	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						8.8587	N/A	N/A	72.1500	0.0095	0.0217	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0018	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0001	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0132	0.0206	72.15	Option 3: A=27691, B=7.558
Toluene						0.2783	N/A	N/A	92.1300	0.0439	0.0032	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						5.8925	N/A	N/A	66.4210	0.8059	0.9350	87.10	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0529	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-20_Edit - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	891.0141
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	60.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	10.2214
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	3,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	60.0000
Deck Fitting Losses (lb):	1,879.4829
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	202.5000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	60.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	2,780.7184

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	17	7.90	0.00	0.00	1,246.4916
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-20_Edit - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	891.01	10.22	1,879.48	0.00	2,780.72
Isopentane	19.36	0.10	40.84	0.00	60.30
Pentane (-n)	18.38	0.13	38.78	0.00	57.29
Hexane (-n)	8.93	0.24	18.84	0.00	28.01
Benzene	1.52	0.07	3.21	0.00	4.80
Cyclohexane	5.77	0.25	12.16	0.00	18.17
Toluene	2.81	0.45	5.93	0.00	9.19
Ethylbenzene	0.17	0.08	0.36	0.00	0.62
Xylene (-m)	0.91	0.54	1.91	0.00	3.36
Isopropyl benzene	0.02	0.02	0.04	0.00	0.07
1,2,4-Trimethylbenzene	0.04	0.11	0.08	0.00	0.23
Naphthalene	0.00	0.00	0.00	0.00	0.00
Unidentified Components	833.11	8.24	1,757.33	0.00	2,598.68

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-23
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	85.00
Volume (gallons):	1,613,000.00
Turnovers:	40.30

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	None

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	16
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	12
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-23 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0002	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0001	0.0002	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0002	0.0002	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0006	0.0009	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0001	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0226	0.0059	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0663	0.0017	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0560	0.0151	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0002	0.0000	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.1116	0.0478	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0134	0.0003	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1238	0.2832	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.1452	0.2269	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0012	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0139	0.0010	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0004	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						7.1254	N/A	N/A	59.6993	0.4428	0.4167	116.71	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0010	0.0000	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-23 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	38,249.8169
Seal Factor A (lb-mole/ft-yr):	5.8000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	2.1000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	85.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	156.3280
Annual Net Throughput (gal/yr.):	65,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	85.0000
Roof Fitting Losses (lb):	24,872.5135
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,679.8243
Average Wind Speed (mph):	10.6000
Total Losses (lb):	63,278.6584

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	16	2.00	0.37	0.91	637.4149
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	12	0.82	0.53	0.14	169.4786
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	13.4766

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-23 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	38,249.82	156.33	24,872.51	0.00	63,278.66
Isopentane	10,831.10	19.35	7,043.08	0.00	17,893.53
1-Pentene	7.62	0.02	4.96	0.00	12.59
2-Methyl-1-butene	7.87	0.03	5.12	0.00	13.02
Pentane (-n)	8,680.72	22.70	5,644.77	0.00	14,348.18
2-Pentene	33.70	0.09	21.91	0.00	55.71
Hexane (-n)	1,828.38	17.45	1,188.93	0.00	3,034.77
Benzene	223.87	3.53	145.57	0.00	372.98
Cyclohexane	577.46	8.75	375.50	0.00	961.72
Toluene	38.20	2.17	24.84	0.00	65.22
Ethylbenzene	0.18	0.03	0.12	0.00	0.32
Xylene (-m)	0.74	0.16	0.48	0.00	1.37
1,2,4-Trimethylbenzene	0.03	0.03	0.02	0.00	0.08
Propane Surrogate (Iso-C5 base)	1.19	0.19	0.77	0.00	2.14
Isobutane Surrogate(Iso-C5 base)	13.23	2.09	8.61	0.00	23.93
Isobutene Surrogate (Iso-C5 base)	0.10	0.02	0.06	0.00	0.18
1-Butene Surrogate (Iso-C5 base)	0.10	0.02	0.06	0.00	0.18
Butane Surrogate (Iso-C5 base)	65.48	10.36	42.58	0.00	118.42
Trans-2-Butene Surrogate (iso-C5)	0.40	0.06	0.26	0.00	0.71
Cis-2-Butene Surrogate (Iso-C5)	0.20	0.03	0.13	0.00	0.36
3-Methyl-1-Butene Surrogate (IC5)	0.10	0.02	0.06	0.00	0.18
Unidentified Components	15,939.16	69.22	10,364.68	0.00	26,373.06

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-24
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Diesel

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	42.50
Liquid Height (ft) :	38.50
Avg. Liquid Height (ft):	35.00
Volume (gallons):	408,565.48
Turnovers:	122.38
Net Throughput(gal/yr):	50,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	1.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-24 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Diesel (#2) - Bloomfield	All	54.58	46.99	62.17	52.22	0.0058	0.0040	0.0077	130.0000			205.00	Option 1: VP50 = .0045 VP60 = .0074
1,2,4-Trimethylbenzene						0.0164	0.0119	0.0223	120.1900	0.0058	0.0257	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	0.4046	0.6340	114.2300	0.0012	0.1651	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane						1.0441	0.8423	1.2845	84.1600	0.0001	0.0282	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	0.0680	0.1170	106.1700	0.0003	0.0073	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene						0.0416	0.0309	0.0554	120.2000	0.0002	0.0023	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	0.0013	0.0027	128.0000	0.0030	0.0016	128.00	Option 1: VP50 = .0015 VP60 = .0024
Toluene						0.2783	0.2174	0.3531	92.1300	0.0007	0.0527	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0034	0.0026	0.0026	148.8120	0.9849	0.6405	207.49	
Xylene (-m)						0.0745	0.0564	0.0975	106.1700	0.0038	0.0766	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-24 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	20.5633
Vapor Space Volume (cu ft):	7,566.0023
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0543
Vented Vapor Saturation Factor:	0.9984
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	7,566.0023
Tank Diameter (ft):	42.5000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	35.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	21.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Daily Avg. Liquid Surface Temp. (deg. R):	514.2529
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0543
Daily Vapor Temperature Range (deg. R):	30.3662
Daily Vapor Pressure Range (psia):	0.0037
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0077
Daily Avg. Liquid Surface Temp. (deg R):	514.2529
Daily Min. Liquid Surface Temp. (deg R):	506.6614
Daily Max. Liquid Surface Temp. (deg R):	521.8445
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9984
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0058
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	371.4964
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Annual Net Throughput (gal/yr.):	50,000,000.0000
Annual Turnovers:	122.3794
Turnover Factor:	0.4118
Maximum Liquid Volume (gal):	408,565.4774
Maximum Liquid Height (ft):	38.5000
Tank Diameter (ft):	42.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	392.0597

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-24 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Diesel (#2) - Bloomfield	371.50	20.56	392.06
Cyclohexane	10.49	0.58	11.07
2,2,4-Trimethylpentane	61.33	3.39	64.73
Toluene	19.58	1.08	20.66
Ethylbenzene	2.70	0.15	2.85
Xylene (-m)	28.46	1.58	30.03
Isopropyl benzene	0.84	0.05	0.88
1,2,4-Trimethylbenzene	9.56	0.53	10.09
Naphthalene	0.58	0.03	0.61
Unidentified Components	237.96	13.17	251.13

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-25
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Diesel

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	42.50
Liquid Height (ft) :	38.50
Avg. Liquid Height (ft):	35.00
Volume (gallons):	408,565.48
Turnovers:	122.38
Net Throughput(gal/yr):	50,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	1.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-25 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Diesel (#2) - Bloomfield	All	54.58	46.99	62.17	52.22	0.0058	0.0040	0.0077	130.0000			205.00	Option 1: VP50 = .0045 VP60 = .0074
1,2,4-Trimethylbenzene						0.0164	0.0119	0.0223	120.1900	0.0058	0.0257	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	0.4046	0.6340	114.2300	0.0012	0.1651	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane						1.0441	0.8423	1.2845	84.1600	0.0001	0.0282	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	0.0680	0.1170	106.1700	0.0003	0.0073	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene						0.0416	0.0309	0.0554	120.2000	0.0002	0.0023	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	0.0013	0.0027	128.0000	0.0030	0.0016	128.00	Option 1: VP50 = .0015 VP60 = .0024
Toluene						0.2783	0.2174	0.3531	92.1300	0.0007	0.0527	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0034	0.0026	0.0026	148.8120	0.9849	0.6405	207.49	
Xylene (-m)						0.0745	0.0564	0.0975	106.1700	0.0038	0.0766	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-25 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	20.5633
Vapor Space Volume (cu ft):	7,566.0023
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0543
Vented Vapor Saturation Factor:	0.9984
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	7,566.0023
Tank Diameter (ft):	42.5000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	35.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	21.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Daily Avg. Liquid Surface Temp. (deg. R):	514.2529
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0543
Daily Vapor Temperature Range (deg. R):	30.3662
Daily Vapor Pressure Range (psia):	0.0037
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0077
Daily Avg. Liquid Surface Temp. (deg R):	514.2529
Daily Min. Liquid Surface Temp. (deg R):	506.6614
Daily Max. Liquid Surface Temp. (deg R):	521.8445
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9984
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0058
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	371.4964
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Annual Net Throughput (gal/yr.):	50,000,000.0000
Annual Turnovers:	122.3794
Turnover Factor:	0.4118
Maximum Liquid Volume (gal):	408,565.4774
Maximum Liquid Height (ft):	38.5000
Tank Diameter (ft):	42.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	392.0597

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-25 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Diesel (#2) - Bloomfield	371.50	20.56	392.06
Cyclohexane	10.49	0.58	11.07
2,2,4-Trimethylpentane	61.33	3.39	64.73
Toluene	19.58	1.08	20.66
Ethylbenzene	2.70	0.15	2.85
Xylene (-m)	28.46	1.58	30.03
Isopropyl benzene	0.84	0.05	0.88
1,2,4-Trimethylbenzene	9.56	0.53	10.09
Naphthalene	0.58	0.03	0.61
Unidentified Components	237.96	13.17	251.13

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-26
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	34.00
Volume (gallons):	137,100.00
Turnovers:	72.94
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-26 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0104	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.0030	N/A	N/A	78.1100	0.0066	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0068	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0240	0.0065	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0083	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0234	0.0100	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0021	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0095	0.0217	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0018	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0001	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0132	0.0206	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0016	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0439	0.0032	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						6.0159	N/A	N/A	66.4249	0.7952	0.9347	87.77	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0529	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-26 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	694.2485
Seal Factor A (lb-mole/ft-yr):	2.2000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.0030
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	34.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	60.1262
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	10,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	34.0000
Deck Fitting Losses (lb):	1,439.5447
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	155.1000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	34.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	2,193.9193

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	11	7.90	0.00	0.00	806.5534
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-26 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	694.25	60.13	1,439.54	0.00	2,193.92
Isopentane	15.09	0.57	31.28	0.00	46.94
Pentane (-n)	14.32	0.79	29.70	0.00	44.82
Hexane (-n)	6.96	1.41	14.43	0.00	22.79
Benzene	1.19	0.40	2.46	0.00	4.04
Cyclohexane	4.49	1.44	9.31	0.00	15.25
Toluene	2.19	2.64	4.54	0.00	9.37
Ethylbenzene	0.13	0.50	0.28	0.00	0.91
Xylene (-m)	0.71	3.18	1.47	0.00	5.35
Isopropyl benzene	0.01	0.11	0.03	0.00	0.15
1,2,4-Trimethylbenzene	0.03	0.63	0.06	0.00	0.72
Naphthalene	0.00	0.01	0.00	0.00	0.01
Propane Surrogate (Iso-C5 base)	0.03	0.10	0.06	0.00	0.18
Isobutane Surrogate(Iso-C5 base)	0.04	0.13	0.08	0.00	0.24
Butane Surrogate (Iso-C5 base)	0.12	0.41	0.25	0.00	0.78
Trans-2-Butene Surrogate (iso-C5)	0.00	0.01	0.00	0.00	0.01
Cis-2-Butene Surrogate (Iso-C5)	0.00	0.01	0.00	0.00	0.01
Unidentified Components	648.94	47.81	1,345.59	0.00	2,042.34

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-27
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	Heavy Burner Fuel

Tank Dimensions

Shell Height (ft):		40.00
Diameter (ft):		42.00
Liquid Height (ft) :		39.00
Avg. Liquid Height (ft):		21.00
Volume (gallons):		413,900.00
Turnovers:		19.33
Net Throughput(gal/yr):		8,000,000.00
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.05

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-27 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Heavy Burner Fuel - Bloomfield	All	180.00	180.00	180.00	180.00	0.0002	0.0002	0.0002	180.0000			365.00	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-27 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	0.0000
Vapor Space Volume (cu ft):	26,785.2189
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0000
Vented Vapor Saturation Factor:	0.9998
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	26,785.2189
Tank Diameter (ft):	42.0000
Vapor Space Outage (ft):	19.3333
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	21.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.0500
Shell Radius (ft):	21.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0000
Vapor Molecular Weight (lb/lb-mole):	180.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0002
Daily Avg. Liquid Surface Temp. (deg. R):	639.6700
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	639.6700
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0000
Daily Vapor Temperature Range (deg. R):	0.0000
Daily Vapor Pressure Range (psia):	0.0000
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0002
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0002
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0002
Daily Avg. Liquid Surface Temp. (deg R):	639.6700
Daily Min. Liquid Surface Temp. (deg R):	639.6700
Daily Max. Liquid Surface Temp. (deg R):	639.6700
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9998
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0002
Vapor Space Outage (ft):	19.3333
Working Losses (lb):	6.5143
Vapor Molecular Weight (lb/lb-mole):	180.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0002
Annual Net Throughput (gal/yr.):	8,000,000.0000
Annual Turnovers:	19.3283
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	413,900.0000
Maximum Liquid Height (ft):	39.0000
Tank Diameter (ft):	42.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	6.5143

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-27 - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Heavy Burner Fuel - Bloomfield	6.51	0.00	6.51

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-28
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Crude Oil

Tank Dimensions

Diameter (ft):	110.00
Volume (gallons):	3,270,000.00
Turnovers:	30.58

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	None

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	18
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	20
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-28 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	54.58	46.99	62.17	52.22	4.4698	N/A	N/A	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0041	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0008	0.0002	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.0030	N/A	N/A	78.1100	0.0051	0.0031	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0098	0.0006	58.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0139	0.0088	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0031	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0216	0.0218	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0022	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0115	0.0619	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0010	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0173	0.0637	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0077	0.0005	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0144	0.0024	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						5.2966	N/A	N/A	57.7758	0.8721	0.8359	194.03	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0149	0.0007	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-28 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	15,002.0351
Seal Factor A (lb-mole/ft-yr):	5.8000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	2.1000
Value of Vapor Pressure Function:	0.1172
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Tank Diameter (ft):	110.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	777.6688
Annual Net Throughput (gal/yr.):	100,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	6.3500
Tank Diameter (ft):	110.0000
Roof Fitting Losses (lb):	7,596.5748
Value of Vapor Pressure Function:	0.1172
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,700.5823
Average Wind Speed (mph):	10.6000
Total Losses (lb):	23,376.2787

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	4.5007
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	177.1016
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	39.6488
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	7,066.5857
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	1.7152
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	18	2.00	0.37	0.91	217.3311
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	20	0.82	0.53	0.14	85.6073
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	4.0844

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-28 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil (Four Corners Sweet)	15,002.04	777.67	7,596.57	0.00	23,376.28
Isopentane	928.90	8.94	470.36	0.00	1,408.20
Pentane (-n)	954.89	13.45	483.53	0.00	1,451.87
Hexane (-n)	326.72	16.80	165.44	0.00	508.96
Benzene	46.64	3.97	23.62	0.00	74.23
Cyclohexane	132.33	10.81	67.01	0.00	210.15
2,2,4-Trimethylpentane	3.71	0.62	1.88	0.00	6.21
Toluene	36.54	11.20	18.50	0.00	66.24
Ethylbenzene	2.53	2.41	1.28	0.00	6.23
Xylene (-m)	10.12	11.59	5.13	0.00	26.84
Isopropyl benzene	0.19	0.39	0.10	0.00	0.67
1,2,4-Trimethylbenzene	0.61	3.19	0.31	0.00	4.11
Naphthalene	0.02	0.78	0.01	0.00	0.80
Propane Surrogate (Iso-C5 base)	7.02	5.99	3.56	0.00	16.56
Isobutane Surrogate(Iso-C5 base)	2.01	1.71	1.02	0.00	4.73
Butane Surrogate (Iso-C5 base)	8.94	7.62	4.52	0.00	21.08
Unidentified Components	12,540.87	678.20	6,350.32	0.00	19,569.39

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-29
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	64.00
Volume (gallons):	700,400.00
Turnovers:	14.28
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	19
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-29 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0104	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.0030	N/A	N/A	78.1100	0.0066	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0068	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0240	0.0065	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0083	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0234	0.0100	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0021	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0095	0.0217	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0018	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0001	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0132	0.0206	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0016	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0439	0.0032	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						6.0159	N/A	N/A	66.4249	0.7952	0.9347	87.77	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0529	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-29 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calculations	
Rim Seal Losses (lb):	3,979.8630
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	64.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	31.9420
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	10,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	64.0000
Deck Fitting Losses (lb):	2,026.1290
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	218.3000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	64.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	6,037.9340

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	19	7.90	0.00	0.00	1,393.1377
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-29 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	3,979.86	31.94	2,026.13	0.00	6,037.93
Isopentane	86.48	0.30	44.03	0.00	130.81
Pentane (-n)	82.11	0.42	41.80	0.00	124.34
Hexane (-n)	39.89	0.75	20.31	0.00	60.94
Benzene	6.80	0.21	3.46	0.00	10.48
Cyclohexane	25.75	0.77	13.11	0.00	39.63
Toluene	12.55	1.40	6.39	0.00	20.35
Ethylbenzene	0.76	0.27	0.39	0.00	1.42
Xylene (-m)	4.05	1.69	2.06	0.00	7.80
Isopropyl benzene	0.08	0.06	0.04	0.00	0.17
1,2,4-Trimethylbenzene	0.18	0.33	0.09	0.00	0.60
Naphthalene	0.00	0.00	0.00	0.00	0.00
Propane Surrogate (Iso-C5 base)	0.16	0.05	0.08	0.00	0.30
Isobutane Surrogate(Iso-C5 base)	0.22	0.07	0.11	0.00	0.39
Butane Surrogate (Iso-C5 base)	0.70	0.22	0.36	0.00	1.27
Trans-2-Butene Surrogate (iso-C5)	0.01	0.00	0.01	0.00	0.02
Cis-2-Butene Surrogate (Iso-C5)	0.01	0.00	0.01	0.00	0.02
Unidentified Components	3,720.11	25.40	1,893.89	0.00	5,639.40

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-30
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	64.00
Volume (gallons):	700,400.00
Turnovers:	171.33
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	19
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-30 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0290	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0001	0.0002	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0002	0.0002	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0003	0.0004	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0001	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0304	0.0079	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0451	0.0012	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0087	0.0023	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0211	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0277	0.0119	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0233	0.0006	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1484	0.3394	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0012	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0023	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0414	0.0647	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0031	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0000	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.1374	0.0099	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						10.1360	N/A	N/A	62.8627	0.3417	0.5579	100.75	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.1378	0.0027	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-30 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	1,306.8207
Seal Factor A (lb-mole/ft-yr):	2.2000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.0030
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	64.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	383.3042
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	120,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	64.0000
Deck Fitting Losses (lb):	2,026.1290
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	218.3000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	64.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	3,716.2539

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	19	7.90	0.00	0.00	1,393.1377
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-30 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	1,306.82	383.30	2,026.13	0.00	3,716.25
Isopentane	443.58	56.88	687.74	0.00	1,188.20
1-Pentene	0.26	0.04	0.40	0.00	0.70
2-Methyl-1-butene	0.27	0.08	0.42	0.00	0.76
Pentane (-n)	84.56	15.87	131.11	0.00	231.54
2-Pentene	0.58	0.11	0.89	0.00	1.58
Hexane (-n)	15.50	10.62	24.04	0.00	50.16
Benzene	10.29	11.65	15.95	0.00	37.89
Cyclohexane	3.07	3.33	4.75	0.00	11.15
Toluene	12.90	52.67	20.00	0.00	85.57
Ethylbenzene	0.64	8.09	0.99	0.00	9.72
Xylene (-m)	3.46	52.82	5.37	0.00	61.66
Isopropyl benzene	0.02	0.46	0.03	0.00	0.50
1,2,4-Trimethylbenzene	0.16	11.12	0.25	0.00	11.53
Naphthalene	0.00	0.88	0.00	0.00	0.89
Propane Surrogate (Iso-C5 base)	0.10	1.19	0.16	0.00	1.46
Isobutane Surrogate(Iso-C5 base)	0.79	8.93	1.22	0.00	10.94
Isobutene Surrogate (Iso-C5 base)	0.00	0.04	0.01	0.00	0.05
1-Butene Surrogate (Iso-C5 base)	0.01	0.08	0.01	0.00	0.09
Butane Surrogate (Iso-C5 base)	1.52	17.29	2.36	0.00	21.17
Trans-2-Butene Surrogate (iso-C5)	0.01	0.08	0.01	0.00	0.09
Cis-2-Butene Surrogate (Iso-C5)	0.01	0.08	0.01	0.00	0.09
3-Methyl-1-Butene Surrogate (IC5)	0.00	0.04	0.01	0.00	0.05
Propylene Surrogate (Iso-C5 base)	0.00	0.01	0.00	0.00	0.01
Unidentified Components	729.09	130.97	1,130.40	0.00	1,990.46

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-31
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Crude Oil

Tank Dimensions

Diameter (ft):	140.00
Volume (gallons):	4,144,000.00
Turnovers:	28.96

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Shoe-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	21
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	33
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-31 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	54.58	46.99	62.17	52.22	4.4698	N/A	N/A	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0041	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0008	0.0002	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.0030	N/A	N/A	78.1100	0.0051	0.0031	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0098	0.0006	58.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0139	0.0088	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0031	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0216	0.0218	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0022	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0115	0.0619	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0010	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0173	0.0637	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0077	0.0005	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0144	0.0024	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						5.2966	N/A	N/A	57.7758	0.8721	0.8359	194.03	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0149	0.0007	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-31 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	5,793.0623
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	1.6000
Value of Vapor Pressure Function:	0.1172
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Tank Diameter (ft):	140.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	733.2306
Annual Net Throughput (gal/yr.):	120,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	6.3500
Tank Diameter (ft):	140.0000
Roof Fitting Losses (lb):	7,728.0902
Value of Vapor Pressure Function:	0.1172
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,747.3360
Average Wind Speed (mph):	10.6000
Total Losses (lb):	14,254.3831

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	4.5007
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	177.1016
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	79.2977
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	7,066.5857
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	1.7152
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	21	2.00	0.37	0.91	253.5529
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	33	0.82	0.53	0.14	141.2520
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	4.0844

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-31 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil (Four Corners Sweet)	5,793.06	733.23	7,728.09	0.00	14,254.38
Isopentane	358.69	8.43	478.51	0.00	845.63
Pentane (-n)	368.73	12.68	491.90	0.00	873.31
Hexane (-n)	126.16	15.84	168.30	0.00	310.31
Benzene	18.01	3.74	24.03	0.00	45.78
Cyclohexane	51.10	10.19	68.17	0.00	129.46
2,2,4-Trimethylpentane	1.43	0.59	1.91	0.00	3.93
Toluene	14.11	10.56	18.82	0.00	43.49
Ethylbenzene	0.98	2.27	1.31	0.00	4.56
Xylene (-m)	3.91	10.93	5.22	0.00	20.05
Isopropyl benzene	0.07	0.37	0.10	0.00	0.54
1,2,4-Trimethylbenzene	0.24	3.01	0.32	0.00	3.56
Naphthalene	0.01	0.73	0.01	0.00	0.75
Propane Surrogate (Iso-C5 base)	2.71	5.65	3.62	0.00	11.97
Isobutane Surrogate(Iso-C5 base)	0.77	1.61	1.03	0.00	3.42
Butane Surrogate (Iso-C5 base)	3.45	7.19	4.60	0.00	15.24
Unidentified Components	4,842.68	639.45	6,460.26	0.00	11,942.38

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-32
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	External Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	60.00
Volume (gallons):	752,300.00
Turnovers:	159.51

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Typical

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	9
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	7
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-32 - External Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0290	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0001	0.0002	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0002	0.0002	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0003	0.0004	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0001	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0304	0.0079	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0451	0.0012	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0087	0.0023	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0211	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0277	0.0119	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0233	0.0006	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.1484	0.3394	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0012	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0023	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0414	0.0647	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0031	0.0001	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0000	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.1374	0.0099	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						10.1360	N/A	N/A	62.8627	0.3417	0.5579	100.75	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.1378	0.0027	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-32 - External Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	2,695.3177
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Average Wind Speed (mph):	10.6000
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	60.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	408.8579
Annual Net Throughput (gal/yr.):	120,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	60.0000
Roof Fitting Losses (lb):	24,523.0284
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	2,642.1700
Average Wind Speed (mph):	10.6000
Total Losses (lb):	27,627.2039

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.8502
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	584.3532
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	130.8228
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	31.00	150.00	1.40	23,316.4579
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	5.6592
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	9	2.00	0.37	0.91	358.5459
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	7	0.82	0.53	0.14	98.8625
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	13.4766

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-32 - External Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	2,695.32	408.86	24,523.03	0.00	27,627.20
Isopentane	914.88	60.67	8,323.97	0.00	9,299.53
1-Pentene	0.54	0.04	4.89	0.00	5.46
2-Methyl-1-butene	0.55	0.08	5.05	0.00	5.68
Pentane (-n)	174.41	16.93	1,586.84	0.00	1,778.18
2-Pentene	1.19	0.12	10.80	0.00	12.11
Hexane (-n)	31.98	11.33	290.96	0.00	334.26
Benzene	21.22	12.43	193.06	0.00	226.71
Cyclohexane	6.32	3.56	57.52	0.00	67.40
Toluene	26.61	56.18	242.10	0.00	324.89
Ethylbenzene	1.32	8.63	11.98	0.00	21.92
Xylene (-m)	7.15	56.34	65.02	0.00	128.50
Isopropyl benzene	0.03	0.49	0.32	0.00	0.84
Isobutene Surrogate (Iso-C5 base)	0.01	0.04	0.06	0.00	0.11
1-Butene Surrogate (Iso-C5 base)	0.01	0.08	0.13	0.00	0.22
Butane Surrogate (Iso-C5 base)	3.14	18.44	28.56	0.00	50.13
Trans-2-Butene Surrogate (iso-C5)	0.01	0.08	0.13	0.00	0.22
1,2,4-Trimethylbenzene	0.33	11.86	3.01	0.00	15.20
Naphthalene	0.00	0.94	0.03	0.00	0.97
Propane Surrogate (Iso-C5 base)	0.22	1.27	1.96	0.00	3.45
Isobutane Surrogate(Iso-C5 base)	1.62	9.53	14.75	0.00	25.90
Cis-2-Butene Surrogate (Iso-C5)	0.01	0.08	0.13	0.00	0.22
3-Methyl-1-Butene Surrogate (IC5)	0.01	0.04	0.06	0.00	0.11
Propylene Surrogate (Iso-C5 base)	0.00	0.01	0.01	0.00	0.02
Unidentified Components	1,503.75	139.70	13,681.70	0.00	15,325.15

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-35
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	100.00
Volume (gallons):	1,903,000.00
Turnovers:	52.55
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	32
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-35 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0104	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.0030	N/A	N/A	78.1100	0.0066	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0068	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0240	0.0065	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0083	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0234	0.0100	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0021	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0095	0.0217	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0018	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0001	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0132	0.0206	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0016	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0439	0.0032	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						6.0159	N/A	N/A	66.4249	0.7952	0.9347	87.77	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0529	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-35 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	556.8838
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	204.4289
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	100,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	100.0000
Deck Fitting Losses (lb):	2,979.3284
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	321.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	3,740.6412

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	32	7.90	0.00	0.00	2,346.3372
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-35 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	556.88	204.43	2,979.33	0.00	3,740.64
Isopentane	12.10	1.94	64.74	0.00	78.78
Pentane (-n)	11.49	2.70	61.47	0.00	75.66
Hexane (-n)	5.58	4.78	29.86	0.00	40.23
Benzene	0.95	1.35	5.09	0.00	7.39
Cyclohexane	3.60	4.91	19.28	0.00	27.79
Toluene	1.76	8.97	9.40	0.00	20.13
Ethylbenzene	0.11	1.70	0.57	0.00	2.38
Xylene (-m)	0.57	10.81	3.03	0.00	14.41
Isopropyl benzene	0.01	0.37	0.06	0.00	0.44
1,2,4-Trimethylbenzene	0.02	2.13	0.13	0.00	2.28
Naphthalene	0.00	0.02	0.00	0.00	0.02
Propane Surrogate (Iso-C5 base)	0.02	0.33	0.12	0.00	0.47
Isobutane Surrogate(Iso-C5 base)	0.03	0.43	0.16	0.00	0.62
Butane Surrogate (Iso-C5 base)	0.10	1.39	0.52	0.00	2.01
Trans-2-Butene Surrogate (iso-C5)	0.00	0.02	0.01	0.00	0.03
Cis-2-Butene Surrogate (Iso-C5)	0.00	0.02	0.01	0.00	0.03
Unidentified Components	520.54	162.56	2,784.88	0.00	3,467.98

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-36
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	100.00
Volume (gallons):	1,903,000.00
Turnovers:	52.55
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	32
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-36 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0143	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Butene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0020	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
1-Pentene						7.7168	N/A	N/A	70.1400	0.0101	0.0201	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0052	0.0007	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0161	0.0166	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0212	0.0311	70.14	Option 1: VP50 = 5 VP60 = 6.5
3-Methyl-1-Butene Surrogate (IC5)						0.1000	N/A	N/A	70.1000	0.0021	0.0001	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	N/A	N/A	78.1100	0.0068	0.0018	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0081	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0046	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0044	0.0012	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0064	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0111	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0018	0.0000	58.10	Option 1: VP50 = .1 VP60 = .1
Isobutene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	56.1000	0.0014	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0903	0.2065	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0008	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0020	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0151	0.0236	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Propylene Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0001	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0263	0.0019	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0033	0.0001	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						5.4303	N/A	N/A	64.9181	0.6998	0.6900	92.31	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0466	0.0009	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-36 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calculations	
Rim Seal Losses (lb):	5,383.2102
Seal Factor A (lb-mole/ft-yr):	5.8000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	204.4289
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	100,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	100.0000
Deck Fitting Losses (lb):	2,979.3284
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	321.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	100.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	8,566.9676

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	32	7.90	0.00	0.00	2,346.3372
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-36 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	5,383.21	204.43	2,979.33	0.00	8,566.97
Isopentane	1,111.86	18.46	615.36	0.00	1,745.68
1-Pentene	108.33	2.06	59.96	0.00	170.35
2-Methyl-1-butene	89.19	3.29	49.36	0.00	141.85
Pentane (-n)	127.05	3.09	70.32	0.00	200.45
2-Pentene	167.59	4.33	92.75	0.00	264.67
Hexane (-n)	25.59	2.27	14.16	0.00	42.03
Benzene	9.48	1.39	5.25	0.00	16.12
Cyclohexane	6.39	0.90	3.53	0.00	10.82
2,2,4-Trimethylpentane	3.68	1.06	2.03	0.00	6.77
Toluene	10.17	5.38	5.63	0.00	21.18
Ethylbenzene	0.80	1.31	0.44	0.00	2.55
Xylene (-m)	4.83	9.53	2.67	0.00	17.02
Isopropyl benzene	0.05	0.16	0.03	0.00	0.24
1,2,4-Trimethylbenzene	0.33	2.92	0.18	0.00	3.43
Naphthalene	0.01	0.41	0.00	0.00	0.42
Propylene Surrogate (Iso-C5 base)	0.01	0.02	0.01	0.00	0.04
Propane Surrogate (Iso-C5 base)	0.01	0.02	0.01	0.00	0.04
Isobutane Surrogate(Iso-C5 base)	0.25	0.37	0.14	0.00	0.76
Isobutene Surrogate (Iso-C5 base)	0.19	0.29	0.11	0.00	0.59
1-Butene Surrogate (Iso-C5 base)	0.28	0.41	0.15	0.00	0.84
Cis-2-Butene Surrogate (Iso-C5)	0.64	0.94	0.35	0.00	1.93
3-Methyl-1-Butene Surrogate (IC5)	0.29	0.43	0.16	0.00	0.88
Unidentified Components	3,714.61	143.06	2,055.84	0.00	5,913.51
Butane Surrogate (Iso-C5 base)	1.13	1.66	0.62	0.00	3.40
Trans-2-Butene Surrogate (iso-C5)	0.46	0.67	0.25	0.00	1.39

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-41
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Crude / Water

Tank Dimensions

Diameter (ft):	25.00
Volume (gallons):	117,600.00
Turnovers:	34.01
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	9
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-41 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	54.58	46.99	62.17	52.22	4.4698	N/A	N/A	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0041	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane						0.5086	N/A	N/A	114.2300	0.0008	0.0002	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.0030	N/A	N/A	78.1100	0.0051	0.0031	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0098	0.0006	58.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0139	0.0088	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0031	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0216	0.0218	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0022	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0115	0.0619	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0010	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0173	0.0637	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0077	0.0005	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0144	0.0024	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						5.2966	N/A	N/A	57.7758	0.8721	0.8359	194.03	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0149	0.0007	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-41 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calculations	
Rim Seal Losses (lb):	21.0970
Seal Factor A (lb-mole/ft-yr):	0.3000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.6000
Value of Vapor Pressure Function:	0.1172
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Tank Diameter (ft):	25.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	136.8697
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	4,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	6.3500
Tank Diameter (ft):	25.0000
Deck Fitting Losses (lb):	391.8425
Value of Vapor Pressure Function:	0.1172
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	139.3000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	25.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000
Product Factor:	0.4000
Total Losses (lb):	549.8092

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	101.2658
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	39.3812
Roof Leg or Hanger Well/Adjustable	9	7.90	0.00	0.00	200.0000
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	33.7553
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	17.4402

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-41 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil (Four Corners Sweet)	21.10	136.87	391.84	0.00	549.81
Isopentane	1.31	1.57	24.26	0.00	27.14
Pentane (-n)	1.34	2.37	24.94	0.00	28.65
Hexane (-n)	0.46	2.96	8.53	0.00	11.95
Benzene	0.07	0.70	1.22	0.00	1.98
Cyclohexane	0.19	1.90	3.46	0.00	5.55
2,2,4-Trimethylpentane	0.01	0.11	0.10	0.00	0.21
Toluene	0.05	1.97	0.95	0.00	2.98
Ethylbenzene	0.00	0.42	0.07	0.00	0.49
Xylene (-m)	0.01	2.04	0.26	0.00	2.32
Isopropyl benzene	0.00	0.07	0.00	0.00	0.07
1,2,4-Trimethylbenzene	0.00	0.56	0.02	0.00	0.58
Naphthalene	0.00	0.14	0.00	0.00	0.14
Propane Surrogate (Iso-C5 base)	0.01	1.05	0.18	0.00	1.25
Isobutane Surrogate(Iso-C5 base)	0.00	0.30	0.05	0.00	0.36
Butane Surrogate (Iso-C5 base)	0.01	1.34	0.23	0.00	1.59
Unidentified Components	17.64	119.36	327.56	0.00	464.56

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-42A
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	20.00
Avg. Liquid Height (ft):	12.00
Volume (gallons):	16,920.59
Turnovers:	118.20
Net Throughput(gal/yr):	2,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-42A - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	54.58	46.99	62.17	52.22	4.4698	3.8834	5.1238	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0164	0.0119	0.0223	120.1900	0.0128	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Pentene						7.7168	6.5078	9.0980	70.1400	0.0004	0.0019	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	0.4046	0.6340	114.2300	0.0088	0.0027	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	3.3782	4.6768	70.1300	0.0013	0.0031	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
3-Methyl-1-Butene Surrogate (IC5)						0.1000	0.1000	0.1000	70.1000	0.0002	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	0.8049	1.2401	78.1100	0.0056	0.0034	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0033	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	0.8423	1.2845	84.1600	0.0038	0.0024	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	0.0680	0.1170	106.1700	0.0054	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	1.3498	2.0242	86.1700	0.0074	0.0075	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0009	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	7.2840	10.5541	72.1500	0.0199	0.1071	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	0.0309	0.0554	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	0.0013	0.0027	128.0000	0.0031	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	5.0834	7.1722	72.1500	0.0088	0.0324	72.15	Option 3: A=27691, B=7.558
Toluene						0.2783	0.2174	0.3531	92.1300	0.0234	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0007	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						5.0924	4.9377	4.9377	57.8255	0.8675	0.8336	186.26	
Xylene (-m)						0.0745	0.0564	0.0975	106.1700	0.0260	0.0012	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-42A - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	1,214.5068
Vapor Space Volume (cu ft):	918.9159
Vapor Density (lb/cu ft):	0.0486
Vapor Space Expansion Factor:	0.2179
Vented Vapor Saturation Factor:	0.3419
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	918.9159
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	8.1250
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	12.0000
Roof Outage (ft):	0.1250
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.1250
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0486
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Daily Avg. Liquid Surface Temp. (deg. R):	514.2529
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2179
Daily Vapor Temperature Range (deg. R):	30.3662
Daily Vapor Pressure Range (psia):	1.2405
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.8834
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	5.1238
Daily Avg. Liquid Surface Temp. (deg R):	514.2529
Daily Min. Liquid Surface Temp. (deg R):	506.6614
Daily Max. Liquid Surface Temp. (deg R):	521.8445
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.3419
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.4698
Vapor Space Outage (ft):	8.1250
Working Losses (lb):	4,027.3902
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Annual Net Throughput (gal/yr.):	2,000,000.0000
Annual Turnovers:	118.1992
Turnover Factor:	0.4205
Maximum Liquid Volume (gal):	16,920.5925
Maximum Liquid Height (ft):	20.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	0.7500
Total Losses (lb):	5,241.8970

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-42A - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (Four Corners Sweet)	4,027.39	1,214.51	5,241.90
Isopentane	431.51	130.13	561.64
1-Pentene	7.56	2.28	9.83
2-Methyl-1-butene	12.68	3.82	16.51
Pentane (-n)	130.40	39.32	169.72
Hexane (-n)	30.05	9.06	39.11
Benzene	13.75	4.15	17.89
Cyclohexane	9.71	2.93	12.64
2,2,4-Trimethylpentane	10.95	3.30	14.26
Toluene	15.94	4.81	20.75
Ethylbenzene	1.19	0.36	1.54
Xylene (-m)	4.74	1.43	6.17
Isopropyl benzene	0.05	0.02	0.07
1,2,4-Trimethylbenzene	0.51	0.15	0.67
Naphthalene	0.01	0.00	0.02
Isobutane Surrogate(Iso-C5 base)	0.22	0.07	0.29
Butane Surrogate (Iso-C5 base)	0.81	0.24	1.05
Trans-2-Butene Surrogate (iso-C5)	0.17	0.05	0.22
Cis-2-Butene Surrogate (Iso-C5)	0.05	0.01	0.06
3-Methyl-1-Butene Surrogate (IC5)	0.05	0.01	0.06
Unidentified Components	3,357.03	1,012.35	4,369.39

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-42B
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	20.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	16,920.59
Turnovers:	118.20
Net Throughput(gal/yr):	2,000,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-42B - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (Four Corners Sweet)	All	54.58	46.99	62.17	52.22	4.4698	3.8834	5.1238	60.0000			163.00	Option 4: RVP=7.4
1,2,4-Trimethylbenzene						0.0164	0.0119	0.0223	120.1900	0.0128	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Pentene						7.7168	6.5078	9.0980	70.1400	0.0004	0.0019	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2,2,4-Trimethylpentane						0.5086	0.4046	0.6340	114.2300	0.0088	0.0027	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2-Methyl-1-butene						3.9857	3.3782	4.6768	70.1300	0.0013	0.0031	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
3-Methyl-1-Butene Surrogate (IC5)						0.1000	0.1000	0.1000	70.1000	0.0002	0.0000	70.10	Option 1: VP50 = .1 VP60 = .1
Benzene						1.0030	0.8049	1.2401	78.1100	0.0056	0.0034	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0033	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0002	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	0.8423	1.2845	84.1600	0.0038	0.0024	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	0.0680	0.1170	106.1700	0.0054	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	1.3498	2.0242	86.1700	0.0074	0.0075	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	0.1000	0.1000	58.1000	0.0009	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	7.2840	10.5541	72.1500	0.0199	0.1071	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	0.0309	0.0554	120.2000	0.0005	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	0.0013	0.0027	128.0000	0.0031	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	5.0834	7.1722	72.1500	0.0088	0.0324	72.15	Option 3: A=27691, B=7.558
Toluene						0.2783	0.2174	0.3531	92.1300	0.0234	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	0.1000	0.1000	56.1000	0.0007	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						5.0924	4.9377	4.9377	57.8255	0.8675	0.8336	186.26	
Xylene (-m)						0.0745	0.0564	0.0975	106.1700	0.0260	0.0012	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-42B - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	1,011.9728
Vapor Space Volume (cu ft):	579.6238
Vapor Density (lb/cu ft):	0.0486
Vapor Space Expansion Factor:	0.2179
Vented Vapor Saturation Factor:	0.4516
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	579.6238
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.1250
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.1250
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.1250
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0486
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Daily Avg. Liquid Surface Temp. (deg. R):	514.2529
Daily Average Ambient Temp. (deg. F):	52.2000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,766.0000
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2179
Daily Vapor Temperature Range (deg. R):	30.3662
Daily Vapor Pressure Range (psia):	1.2405
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.8834
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	5.1238
Daily Avg. Liquid Surface Temp. (deg R):	514.2529
Daily Min. Liquid Surface Temp. (deg R):	506.6614
Daily Max. Liquid Surface Temp. (deg R):	521.8445
Daily Ambient Temp. Range (deg. R):	30.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4516
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.4698
Vapor Space Outage (ft):	5.1250
Working Losses (lb):	4,027.3902
Vapor Molecular Weight (lb/lb-mole):	60.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4698
Annual Net Throughput (gal/yr.):	2,000,000.0000
Annual Turnovers:	118.1992
Turnover Factor:	0.4205
Maximum Liquid Volume (gal):	16,920.5925
Maximum Liquid Height (ft):	20.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	0.7500
Total Losses (lb):	5,039.3630

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-42B - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (Four Corners Sweet)	4,027.39	1,011.97	5,039.36
Isopentane	431.51	108.43	539.94
1-Pentene	7.56	1.90	9.45
2-Methyl-1-butene	12.68	3.19	15.87
Pentane (-n)	130.40	32.76	163.16
Hexane (-n)	30.05	7.55	37.60
Benzene	13.75	3.45	17.20
Cyclohexane	9.71	2.44	12.15
2,2,4-Trimethylpentane	10.95	2.75	13.71
Toluene	15.94	4.01	19.94
Ethylbenzene	1.19	0.30	1.48
Xylene (-m)	4.74	1.19	5.93
Isopropyl benzene	0.05	0.01	0.06
1,2,4-Trimethylbenzene	0.51	0.13	0.64
Naphthalene	0.01	0.00	0.02
Isobutane Surrogate(Iso-C5 base)	0.22	0.06	0.28
Butane Surrogate (Iso-C5 base)	0.81	0.20	1.01
Trans-2-Butene Surrogate (iso-C5)	0.17	0.04	0.21
Cis-2-Butene Surrogate (Iso-C5)	0.05	0.01	0.06
3-Methyl-1-Butene Surrogate (IC5)	0.05	0.01	0.06
Unidentified Components	3,357.03	843.53	4,200.56

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-44
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Gasoline

Tank Dimensions

Diameter (ft):	25.00
Volume (gallons):	73,500.00
Turnovers:	13.61
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	9
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-44 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (premium base blend) - Bloomfield	All	54.58	46.99	62.17	52.22	5.0870	N/A	N/A	67.0000			88.00	Option 4: RVP=10.8, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0104	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.0030	N/A	N/A	78.1100	0.0066	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0068	0.0002	58.10	Option 1: VP50 = .1 VP60 = .1
Cis-2-Butene Surrogate (Iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0240	0.0065	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0083	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0234	0.0100	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isobutane Surrogate(Iso-C5 base)						0.1000	N/A	N/A	58.1000	0.0021	0.0001	58.10	Option 1: VP50 = .1 VP60 = .1
Isopentane						8.8587	N/A	N/A	72.1500	0.0095	0.0217	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0018	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene						0.0019	N/A	N/A	128.0000	0.0001	0.0000	128.00	Option 1: VP50 = .0015 VP60 = .0024
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0132	0.0206	72.15	Option 3: A=27691, B=7.558
Propane Surrogate (Iso-C5 base)						0.1000	N/A	N/A	44.1000	0.0016	0.0000	44.10	Option 1: VP50 = .1 VP60 = .1
Toluene						0.2783	N/A	N/A	92.1300	0.0439	0.0032	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Trans-2-Butene Surrogate (iso-C5)						0.1000	N/A	N/A	56.1000	0.0001	0.0000	56.10	Option 1: VP50 = .1 VP60 = .1
Unidentified Components						6.0159	N/A	N/A	66.4249	0.7952	0.9347	87.77	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0529	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-44 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	510.4768
Seal Factor A (lb-mole/ft-yr):	2.2000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.0030
Value of Vapor Pressure Function:	0.1385
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0870
Tank Diameter (ft):	25.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	8.1772
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	1,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.0700
Tank Diameter (ft):	25.0000
Deck Fitting Losses (lb):	1,292.8986
Value of Vapor Pressure Function:	0.1385
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	139.3000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	25.0000
Vapor Molecular Weight (lb/lb-mole):	67.0000
Product Factor:	1.0000
Total Losses (lb):	1,811.5526

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	334.1303
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	129.9396
Roof Leg or Hanger Well/Adjustable	9	7.90	0.00	0.00	659.9073
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	111.3768
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	57.5447

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-44 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (premium base blend) - Bloomfield	510.48	8.18	1,292.90	0.00	1,811.55
Isopentane	11.09	0.08	28.09	0.00	39.26
Pentane (-n)	10.53	0.11	26.67	0.00	37.31
Hexane (-n)	5.12	0.19	12.96	0.00	18.27
Benzene	0.87	0.05	2.21	0.00	3.14
Cyclohexane	3.30	0.20	8.37	0.00	11.86
Toluene	1.61	0.36	4.08	0.00	6.05
Ethylbenzene	0.10	0.07	0.25	0.00	0.41
Xylene (-m)	0.52	0.43	1.32	0.00	2.27
Isopropyl benzene	0.01	0.01	0.03	0.00	0.05
1,2,4-Trimethylbenzene	0.02	0.09	0.06	0.00	0.16
Naphthalene	0.00	0.00	0.00	0.00	0.00
Propane Surrogate (Iso-C5 base)	0.02	0.01	0.05	0.00	0.09
Isobutane Surrogate(Iso-C5 base)	0.03	0.02	0.07	0.00	0.11
Butane Surrogate (Iso-C5 base)	0.09	0.06	0.23	0.00	0.37
Trans-2-Butene Surrogate (iso-C5)	0.00	0.00	0.00	0.00	0.01
Cis-2-Butene Surrogate (Iso-C5)	0.00	0.00	0.00	0.00	0.01
Unidentified Components	477.16	6.50	1,208.51	0.00	1,692.18

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	T-45
City:	Bloomfield
State:	New Mexico
Company:	San Juan Refining
Type of Tank:	Internal Floating Roof Tank
Description:	Ethanol

Tank Dimensions

Diameter (ft):	35.00
Volume (gallons):	202,500.00
Turnovers:	7.41
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bloomfield, New Mexico (Avg Atmospheric Pressure = 11.9 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T-45 - Internal Floating Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethanol Blendstock	All	54.58	46.99	62.17	52.22	0.5443	N/A	N/A	46.1000			47.60	Option 2: A=8.321, B=1718.2, C=237.5
1,2,4-Trimethylbenzene						0.0164	N/A	N/A	120.1900	0.0010	0.0000	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1-Pentene						7.7168	N/A	N/A	70.1400	0.0001	0.0015	70.14	Option 2: A=6.8442, B=1044.01, C=233.5
2-Methyl-1-butene						3.9857	N/A	N/A	70.1300	0.0002	0.0015	70.13	Option 2: A=6.4863, B=1039.69, C=236.65
2-Pentene						5.6874	N/A	N/A	70.1400	0.0003	0.0032	70.14	Option 1: VP50 = 5 VP60 = 6.5
Benzene						1.0030	N/A	N/A	78.1100	0.0009	0.0017	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.0441	N/A	N/A	84.1600	0.0011	0.0022	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethyl Alcohol Surrogate						0.1000	N/A	N/A	46.0700	0.9531	0.1808	46.07	Option 1: VP50 = .1 VP60 = .1
Ethylbenzene						0.0897	N/A	N/A	106.1700	0.0004	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6589	N/A	N/A	86.1700	0.0018	0.0057	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						8.8587	N/A	N/A	72.1500	0.0042	0.0706	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Isopropyl benzene						0.0416	N/A	N/A	120.2000	0.0001	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Pentane (-n)						6.0535	N/A	N/A	72.1500	0.0026	0.0299	72.15	Option 3: A=27691, B=7.558
Toluene						0.2783	N/A	N/A	92.1300	0.0026	0.0014	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						77.9633	N/A	N/A	43.4056	0.0293	0.7012	268.24	
Xylene (-m)						0.0745	N/A	N/A	106.1700	0.0023	0.0003	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

T-45 - Internal Floating Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations	
Rim Seal Losses (lb):	11.3311
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Value of Vapor Pressure Function:	0.0117
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.5443
Tank Diameter (ft):	35.0000
Vapor Molecular Weight (lb/lb-mole):	46.1000
Product Factor:	1.0000
Withdrawal Losses (lb):	9.3819
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	1,500,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.5000
Tank Diameter (ft):	35.0000
Deck Fitting Losses (lb):	83.6884
Value of Vapor Pressure Function:	0.0117
Vapor Molecular Weight (lb/lb-mole):	46.1000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	155.1000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	35.0000
Vapor Molecular Weight (lb/lb-mole):	46.1000
Product Factor:	1.0000
Total Losses (lb):	104.4014

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	19.4248
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	7.5541
Roof Leg or Hanger Well/Adjustable	11	7.90	0.00	0.00	46.8892
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	6.4749
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.3454

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

T-45 - Internal Floating Roof Tank
Bloomfield, New Mexico

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Ethanol Blendstock	11.33	9.38	83.69	0.00	104.40
Cyclohexane	0.02	0.01	0.18	0.00	0.22
Toluene	0.02	0.02	0.11	0.00	0.15
Ethylbenzene	0.00	0.00	0.01	0.00	0.01
Xylene (-m)	0.00	0.02	0.03	0.00	0.05
Ethyl Alcohol Surrogate	2.05	8.94	15.13	0.00	26.12
Isopropyl benzene	0.00	0.00	0.00	0.00	0.00
1,2,4-Trimethylbenzene	0.00	0.01	0.00	0.00	0.01
Isopentane	0.80	0.04	5.91	0.00	6.75
1-Pentene	0.02	0.00	0.12	0.00	0.14
2-Methyl-1-butene	0.02	0.00	0.13	0.00	0.15
Pentane (-n)	0.34	0.02	2.50	0.00	2.86
2-Pentene	0.04	0.00	0.27	0.00	0.31
Hexane (-n)	0.06	0.02	0.47	0.00	0.56
Benzene	0.02	0.01	0.14	0.00	0.17
Unidentified Components	7.95	0.27	58.68	0.00	66.90

loading operation, resulting in high levels of vapor generation and loss. If the turbulence is great enough, liquid droplets will be entrained in the vented vapors.

A second method of loading is submerged loading. Two types are the submerged fill pipe method and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the cargo tank. In the bottom loading method, a permanent fill pipe is attached to the cargo tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in much lower vapor generation than encountered during splash loading.

The recent loading history of a cargo carrier is just as important a factor in loading losses as the method of loading. If the carrier has carried a nonvolatile liquid such as fuel oil, or has just been cleaned, it will contain vapor-free air. If it has just carried gasoline and has not been vented, the air in the carrier tank will contain volatile organic vapors, which will be expelled during the loading operation along with newly generated vapors.

Cargo carriers are sometimes designated to transport only one product, and in such cases are practicing "dedicated service". Dedicated gasoline cargo tanks return to a loading terminal containing air fully or partially saturated with vapor from the previous load. Cargo tanks may also be "switch loaded" with various products, so that a nonvolatile product being loaded may expel the vapors remaining from a previous load of a volatile product such as gasoline. These circumstances vary with the type of cargo tank and with the ownership of the carrier, the petroleum liquids being transported, geographic location, and season of the year.

One control measure for vapors displaced during liquid loading is called "vapor balance service", in which the cargo tank retrieves the vapors displaced during product unloading at bulk plants or service stations and transports the vapors back to the loading terminal. Figure 5.2-5 shows a tank truck in vapor balance service filling a service station underground tank and taking on displaced gasoline vapors for return to the terminal. A cargo tank returning to a bulk terminal in vapor balance service normally is saturated with organic vapors, and the presence of these vapors at the start of submerged loading of the tanker truck results in greater loading losses than encountered during nonvapor balance, or "normal", service. Vapor balance service is usually not practiced with marine vessels, although some vessels practice emission control by means of vapor transfer within their own cargo tanks during ballasting operations, discussed below.

Emissions from loading petroleum liquid can be estimated (with a probable error of ±30 percent)[4] using the following expression:

$$L_L = 12.46 \frac{SPM}{T} \quad (1)$$

where:

L_L = loading loss, pounds per 1000 gallons ($lb/10^3$ gal) of liquid loaded

S = a saturation factor (see Table 5.2-1)
P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia) (see Figure 7.1-5, Figure 7.1-6, and Table 7.1-2)
M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole) (see Table 7.1-2)
T = temperature of bulk liquid loaded, °R (°F + 460)

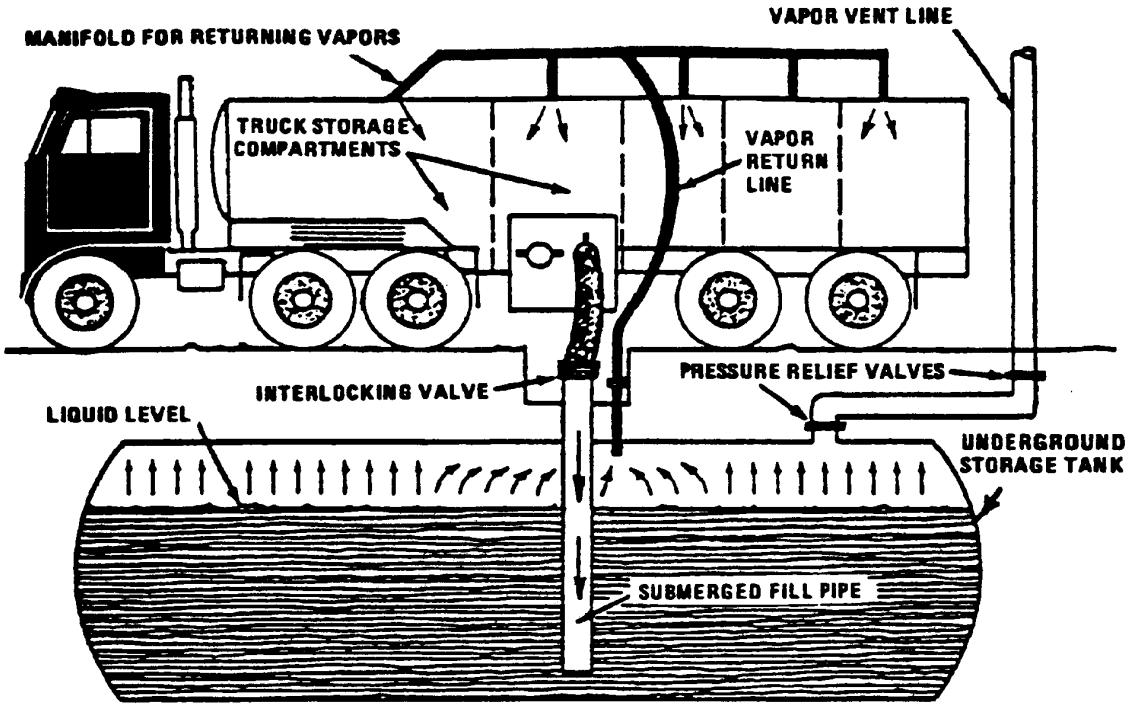


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

Table 5.2-1. SATURATION (S) FACTORS FOR CALCULATING PETROLEUM LIQUID LOADING LOSSES

Cargo Carrier	Mode Of Operation	S Factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00
Marine vessels[a]	Submerged loading: ships	0.2
	Submerged loading: barges	0.5

[a] For products other than gasoline and crude oil. For marine loading of gasoline, use factors from Table 5.2-2. For marine loading of crude oil, use Equations 2 and 3 and Table 5.2-3.

The saturation factor, S, represents the expelled vapor's fractional approach to saturation, and it accounts for the variations observed in emission rates from the different unloading and loading methods. Table 5.2-1 lists suggested saturation factors.

Emissions from controlled loading operations can be calculated by multiplying the uncontrolled emission rate calculated in Equation 1 by an overall reduction efficiency term:

$$\left(1 - \frac{\text{eff}}{100}\right)$$

The overall reduction efficiency should account for the capture efficiency of the collection system as well as both the control efficiency and any downtime of the control device. Measures to reduce loading emissions include selection of alternate loading methods and application of vapor recovery equipment. The latter captures organic vapors displaced during loading operations and recovers the vapors by the use of refrigeration, absorption, adsorption, and/or compression. The recovered product is piped back to storage. Vapors can also be controlled through combustion in a thermal oxidation unit, with no product recovery. Figure 5.2-6 demonstrates the recovery of gasoline vapors from tank trucks during loading operations at bulk terminals. Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used.[5-6] However, not all of the displaced vapors reach the control device, because of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 99.2 percent for tanker trucks passing the MACT-level annual leak test (not more than 1 inch water column pressure change in 5 minutes after pressurizing to 18 inches water followed by pulling a vacuum of 6 inches water).[7] A collection efficiency of 98.7 percent (a 1.3 percent leakage rate) should be assumed for trucks passing the NSPS-level annual test (3 inches pressure change) A collection efficiency of 70 percent should be assumed for trucks not passing one of these annual leak tests[6].

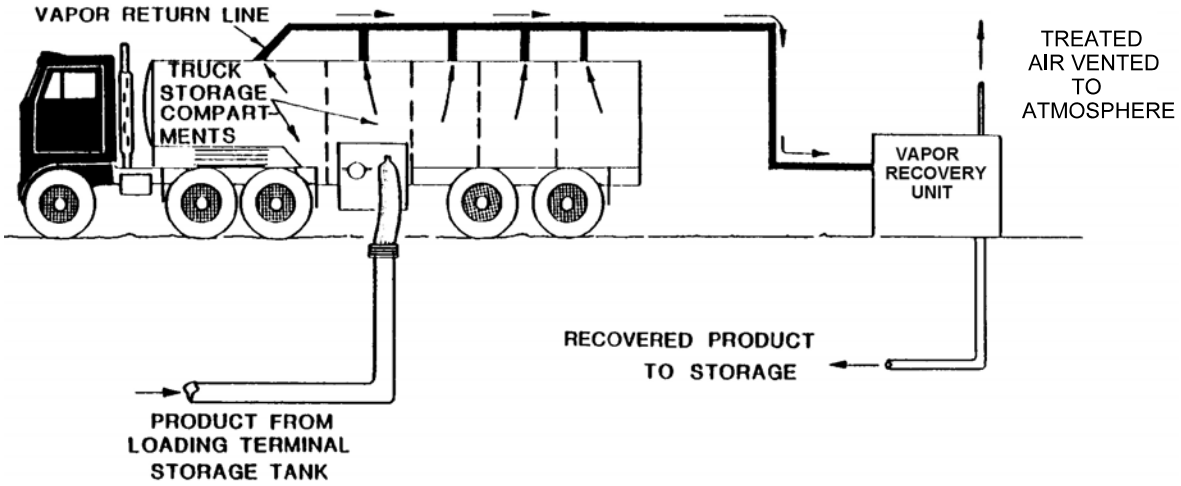


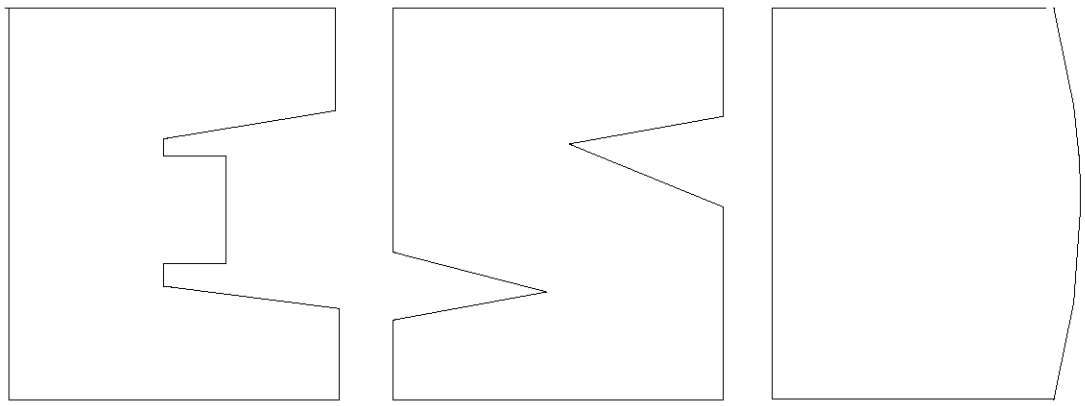
Figure 5.2-6. Tank truck loading with vapor recovery.

United States Environmental Protection Agency
Office of Air Quality Planning and Standards Research Triangle Park NC 27711
EPA-453/R-95-017 November 1995

Air

EPA

Protocol for Equipment Leak Emission Estimates



EPA-453/R-95-017

1995 Protocol for Equipment Leak Emission Estimates

Emission Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

November 1995

LIST OF TABLES

TABLE 2-2. REFINERY AVERAGE EMISSION FACTORS[a]

Equipment type	Service	Emission factor (kg/hr/source)[b]
Valves	Gas	0.0268
	Light liquid	0.0109
	Heavy liquid	0.00023
Pump seals[c]	Light liquid	0.114
	Heavy liquid	0.021
Compressor seals	Gas	0.636
Pressure relief valves	Gas	0.16
Connectors	All	0.00025
Open-ended lines	All	0.0023
Sampling connections	All	0.0150

[a]Source: Reference 2.

[b]These factors are for non-methane organic compound emission rates.

[c]The light liquid pump seal factor can be used to estimate the leak rate from agitator seals.

TABLE 2-10. PETROLEUM INDUSTRY LEAK RATE/SCREENING VALUE CORRELATIONS[a]

Equipment type/service	Correlation[b,c]
Valves/all	Leak rate (kg/hr) = 2.29E-06 × $(SV)^{0.746}$
Pump seals/all	Leak rate (kg/hr) = 5.03E-05 × $(SV)^{0.610}$
Others[d]	Leak rate (kg/hr) = 1.36E-05 × $(SV)^{0.589}$
Connectors/all	Leak rate (kg/hr) = 1.53E-06 × $(SV)^{0.735}$
Flanges/all	Leak rate (kg/hr) = 4.61E-06 × $(SV)^{0.703}$
Open-ended lines/all	Leak rate (kg/hr) = 2.20E-06 × $(SV)^{0.704}$

[a]The correlations presented in this table are revised petroleum industry correlations.

[b]SV = Screening value in ppmv.

[c]These correlations predict total organic compound emission rates (including non-VOC's such as methane and ethane).

[d]The "other" equipment type was derived from instruments, loading arms, pressure relief valves, stuffing boxes, and vents. This "other" equipment type should be applied to any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

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Air Permits Division

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Table of Contents

Overview of Technical Guidance Package for Dry Abrasive Blast Cleaning

This package discusses the different types of authorizations to construct and operate dry abrasive blast cleaning facilities as well as provides technical information necessary for completing an air permit application. In addition, a list of potentially applicable state and federal rules are listed.

This package does **not**:

(1) ... address dry abrasive blast cleaning of water storage tanks. We have a specific regulation for this type of operation under **Abrasive Blasting of Water Storage Tanks Performed by Portable Operations** (*30 TAC § 111.131-111.139*). Contact our Engineering Services Division at (512) 239-1051 for more information.

(2) ... include Wet Blast Cleaning or Water Slurry Blast Cleaning. These operations can generally be exempt from permitting.

(3) ... include technical guidance for spray painting facilities. Please request a copy of the ***Technical Guidance Package for Surface Coating Facilities*** from our administrative section of the New Source Review Permits Division at (512) 239-1250 for a copy of this package.

(4) ... address questions of an administrative nature, application forms, registration forms, and general publications. Contact our administrative section of the New Source Review Permits Division at (512) 239-1250 for more information.

Obtaining Authorization to Operate

TCEQ has three ways to obtain authorization to construct and operate your abrasive blast cleaning facility:

Grandfathered from Permitting

Grandfathered facilities are those that were in operation prior to September 1, 1971 and have not undergone modification to their operation. If grandfathered, no authorization is required.

Exempt from Permitting

A facility may be exempt from the requirement to obtain an air permit if the emissions are insignificant. The following is a list of exemptions that are applicable to abrasive blast cleaning:

- **Wet Blast Cleaning** (*30 TAC § 106.451*)
- **Dry Abrasive Cleaning** (*30 TAC § 106.452*)

To qualify, the conditions of each exemption must be met exactly. In addition, registration may be required as well.

Required to have a Permit

If your facility is not grandfathered and cannot meet the conditions of an exemption, then you must obtain an air quality permit. We have the following types of air quality permits:

- **Permit to Construct** (*30 TAC § 116.116 Subchapter B*)
- **Standard Permits** (*30 TAC § 116.116 Subchapter F*)
- **Flexible Permits** (*30 TAC § 116.116 Subchapter G*)

However, most abrasive blast cleaning facilities that require an air quality permit only require a **Permit to Construct**.

Review of an Air Quality Permit

The three basic parts of the *technical* review of an air permit application are:

(1) Review of any proposed source reduction or proposed add-on control methods. This is known as the Best Available Control Technology (BACT) review.

(2) Calculation of estimated hourly and annual emission rates accounting for any controls proposed for the BACT review.

(3) Estimation and evaluation of off-property concentrations of each chemical/compound that may be emitted.

Note: Even though we may accept a BACT proposal, the resulting off-property concentrations may still be too high. In this case, additional levels of control above the BACT proposal may be required to reduce the off-property concentrations.

Best Available Control Technology (BACT) Review

For dry abrasive blast cleaning facilities, our current BACT Guidelines for Dry Abrasive Blast Cleaning Operations do <u>not</u> require process controls or add-on controls.

Emission Rate Calculations

Hourly and annual emission calculations of particulate matter are necessary for the off-property impacts review. In addition, these emission rates are used to determine the applicability of other rules and regulations. The emissions are separated into two categories: total suspended particulate matter (PM) and particulate matter less than or equal ten microns in size (PM_{10}).

Enclosed Operations

If you will be operating an enclosed blast cleaning operation, you will most likely be able to be exempt from permitting under **Dry Abrasive Cleaning** (*30 TAC § 106.452*).

The following equation can be used to calculate hourly and annual PM and PM_{10} emission rates:

$$Emission\,(lb/hr,yr) = Usage\,(lb/hr,yr) \times Emission\,Factor \times \left(1 - \frac{Removal\,Efficiency\,(\%)}{100}\right)$$

where

Usage is the blast media usage,

Emission Factor is selected from the following:

Particle Size	Silica Sand	Coal Slag
PM	0.00590 lb PM/lb usage	0.00286 lb PM/lb usage
PM_{10}	0.00140 lb PM_{10}/lb usage	0.00034 lb PM_{10}/lb usage

NOTE: For other types of blast media, please consult the manufacturer for this data.

Removal Efficiency is the manufacturer's average weight arrestance efficiency for fabric filters. For baghouses or cartridge filters, a 95% average weight arrestance efficiency may be used if the outlet grain loading is less than or equal to 0.01 grains per dry standard cubic foot.

The following is an example of calculating hourly PM and PM_{10} emissions of coal slag:

example usage rate = 1000 pounds per hour

example control device is a baghouse with a 0.002 gr/dscf outlet grain loading

select PM *Emission Factor* of 0.00286 for coal slag

select PM_{10} *Emission Factor* of 0.00034 for coal slag

$$PM\ Emissions = 1000lb \bullet 0.00286 \bullet \left(1 - \frac{95(\%)}{100}\right) = 0.14lb/hour\ of\ PM$$

$$PM_{10}\ Emissions = 1000lb \bullet 0.00034 \bullet \left(1 - \frac{95(\%)}{100}\right) = 0.02lb/hour\ of\ PM_{10}$$

NOTE: An enclosure, building, or room is considered to be enclosed if it can maintain a face velocity of at least 100 feet per minute (fpm) as follows:

$$Face\ Velocity\ (fpm) = \frac{Total\ Exhaust\ Fan\ Capacity\ (standard\ cubic\ feet\ per\ minute)}{Total\ Natural\ Draft\ Area\ (ft^2)}$$

Non-enclosed Operations

These equations are for calculating emission from facilities that operate outdoors or cannot achieve a 100-fpm face velocity. The following equation can be used to calculate hourly and annual emission PM and PM_{10} emission rates:

$$Emission\ (lb/hr,yr) = Usage\ (lb/hr,yr) \bullet Emission\ Factor$$

where

Usage is the blast media usage rate,

Emission Factor is selected from the following:

Particle Size	Silica Sand	Coal Slag
PM	0.00590 lb PM/lb usage	0.00286 lb PM/lb usage
PM_{10}	0.00140 lb PM_{10}/lb usage	0.00034 lb PM_{10}/lb usage

NOTE: For other types of blast media, please consult the manufacturer for this data.

The following is an example of calculating hourly PM and PM_{10} emissions of silica sand:

example usage rate = 4000 pounds per hour
select PM *Emission Factor* of 0.0059 for silica sand
select PM_{10} *Emission Factor* of 0.0014 for silica sand

$$PM\ Emissions = 4000lb \bullet 0.0059 = 23.60lb/hour\ of\ PM$$

$$PM_{10}\ Emissions = 4000lb \bullet 0.0014 = 5.60lb/hour\ of\ PM_{10}$$

Impacts Review

For facilities under permit review, we evaluate the predicted off-property concentrations of particulate matter that may be emitted. Computerized air dispersion models are used for this analysis (Environmental Protection Agency (EPA) Screen or EPA ISCST3).

Since these analyses are specific to each facility and the density of the blast media used, it is not feasible to provide general guidance for the impacts review. Also, there are specific rules

PAINTING BASICS AND EMISSION CALCULATIONS FOR TCEQ AIR QUALITY PERMIT APPLICATIONS

DECEMBER 13, 2005 (UPDATED OCTOBER 11, 2006)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing

And

Preventing Pollution

Presented by:

Mike Coldiron, P.E. and Eddie Mack, P.E.
Texas Commission on Environmental Quality
Austin, Texas

The geometry of the part and the application equipment determine the transfer efficiency (TE), which is a measure of the amount of sprayed coating that is applied to the part. TE may be determined through several methods such as estimation from tables or charts, the volume of coating applied to a part, or through the weighing of parts and the paint pots.

Estimation of TE from tables or charts (see References 5 and 6) is the least accurate method and is presented as Table 1.

Table 1. Transfer Efficiency as a Function of Application Equipment and Part Geometry

Application Equipment	Flat Surface	Table Leg	Bird Cage
Air Atomized	50	15	10
Airless	75-80	10	10
HVLP	65	15	10
Electrostatic Disk	95	90-95	90-95
Electrostatic Airless	80	70	70
Electrostatic Air Atomized	75	65	65

A significant improvement in the estimation of TE can be achieved through the use of the volume of coating applied to a part. This can be determined either through the use of wet or dry film thickness, coating volume solids content, the surface area of the part, the number of parts coated, and accurately weighing the application system (paint pots, hoses and gun) before and after the coating is applied.

Cummins Engine Company, Inc.

Exhaust Emissions Data Sheet

Data Sheet: DS-1300
Date: 08Mar95

Engine

Model:	NTA855-F	**Application:**	Firepump
Type:	4 cycle, In-Line, 6 Cylinder Diesel	**Config. Number:**	D093400FX02
Aspiration:	Turbocharged and Aftercooled	**Bore:**	5.50 in. (140 mm)
Compression Ratio:	14.1:1	**Stroke:**	6.00 in. (152 mm)
Emissions Control Device:	Turbo, Aftercooling	**Displacement:**	855 cu. in. (14.0 liters)

Performance Data	2100 RPM	1760 RPM
BHP	400	380
Fuel Consumption (gallons/hour)	20.9	19.7
Air to Fuel Ratio	27.9	24.9
Exhaust Gas Flow (CFM)	2530	2098
Exhaust Gas Temperature (°F)	880	930

Exhaust Emissions Data

(All values are grams/hp-hour)

Component		2100 RPM	1760 RPM
HC	(Total Unburned Hydrocarbons)	0.46	0.50
NOx	(Oxides of Nitrogen as NO_2)	12.00	13.00
CO	(Carbon Monoxide)	2.00	8.0
PM	(Particulate Matter)	0.50	0.50
SO_2	(Sulfur Dioxide)	0.65	0.65
CO_2	(Carbon Dioxide)	540	530
N_2	(Nitrogen)	3600	3200
O_2	(Oxygen)	530	410
H_2O	(Water Vapor)	200	190

Test Conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.
Fuel Temperature:	99° F ± 9° (at fuel pump inlet)
Intake Air Temperature:	77° F ± 9°
Barometric Pressure:	29.6 in. Hg ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H_2O/lb. dry air

The HC, NOx, and CO emissions data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimates. This data is subject to instrumentation, measurement, and engine-to-engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

CUMMINS ENGINE COMPANY, INC., Columbus, IN 47202-3005 U.S.A.

Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES[a]

Pollutant	Gasoline Fuel (SCC 2-02-003-01, 2-03-003-01)		Diesel Fuel (SCC 2-02-001-02, 2-03-001-01)		EMISSION FACTOR RATING
	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	
NO_x	0.011	1.63	0.031	4.41	D
CO	6.96 E-03[d]	0.99[d]	6.68 E-03	0.95	D
SO_x	5.91 E-04	0.084	2.05 E-03	0.29	D
PM-10[b]	7.21 E-04	0.10	2.20 E-03	0.31	D
CO_2[c]	1.08	154	1.15	164	B
Aldehydes	4.85 E-04	0.07	4.63 E-04	0.07	D
TOC					
Exhaust	0.015	2.10	2.47 E-03	0.35	D
Evaporative	6.61 E-04	0.09	0.00	0.00	E
Crankcase	4.85 E-03	0.69	4.41 E-05	0.01	E
Refueling	1.08 E-03	0.15	0.00	0.00	E

[a] References 2,5-6,9-14. When necessary, an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr was used to convert from lb/MMBtu to lb/hp-hr. To convert from lb/hp-hr to kg/kw-hr, multiply by 0.608. To convert from lb/MMBtu to ng/J, multiply by 430. SCC = Source Classification Code. TOC = total organic compounds.

[b] PM-10 = particulate matter less than or equal to 10 μm aerodynamic diameter. All particulate is assumed to be ≤ 1 μm in size.

[c] Assumes 99% conversion of carbon in fuel to CO_2 with 87 weight % carbon in diesel, 86 weight % carbon in gasoline, average BSFC of 7,000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and gasoline heating value of 20,300 Btu/lb.

[d] Instead of 0.439 lb/hp-hr (power output) and 62.7 lb/mmBtu (fuel input), the correct emissions factors values are 6.96 E-03 lb/hp-hr (power output) and 0.99 lb/mmBtu (fuel input), respectively. This is an editorial correction. March 24, 2009

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES[a]

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene[b]	9.33 E-04
Toluene[b]	4.09 E-04
Xylenes[b]	2.85 E-04
Propylene	2.58 E-03
1,3-Butadiene[b,c]	<3.91 E-05
Formaldehyde[b]	1.18 E-03
Acetaldehyde[b]	7.67 E-04
Acrolein[b]	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene[b]	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,l)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

[a] Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.
[b] Hazardous air pollutant listed in the *Clean Air Act*.
[c] Based on data from 1 engine.

Diesel SERVICE & SUPPLY INC
755 N 9th Ave. Brighton, Colorado 80603
Sales@DieselServiceandSupply.com
800-853-2073 | 303-659-2073 | 303-659-7923 fax
www.dieselserviceandsupply.com

Approximate Fuel Consumption Chart

This chart approximates the fuel consumption of a diesel generator based on the size of the generator and the load at which the generator is operating at. Please note that this table is intended to be used as an estimate of how much fuel a generator uses during operation and is not an exact representation due to various factors that can increase or decrease the amount of fuel consumed.

Generator Size (kW)	1/4 Load (gal/hr)	1/2 Load (gal/hr)	3/4 Load (gal/hr)	Full Load (gal/hr)
20	0.6	0.9	1.3	1.6
30	1.3	1.8	2.4	2.9
40	1.6	2.3	3.2	4.0
60	1.8	2.9	3.8	4.8
75	2.4	3.4	4.6	6.1
100	2.6	4.1	5.8	7.4
125	3.1	5.0	7.1	9.1
135	3.3	5.4	7.6	9.8
150	3.6	5.9	8.4	10.9
175	4.1	6.8	9.7	12.7
200	4.7	7.7	11.0	14.4
230	5.3	8.8	12.5	16.6
250	5.7	9.5	13.6	18.0
300	6.8	11.3	16.1	21.5
350	7.9	13.1	18.7	25.1
400	8.9	14.9	21.3	28.6
500	11.0	18.5	26.4	35.7
600	13.2	22.0	31.5	42.8
750	16.3	27.4	39.3	53.4
1000	21.6	36.4	52.1	71.1
1250	26.9	45.3	65.0	88.8
1500	32.2	54.3	77.8	106.5
1750	37.5	63.2	90.7	124.2
2000	42.8	72.2	103.5	141.9
2250	48.1	81.1	116.4	159.6

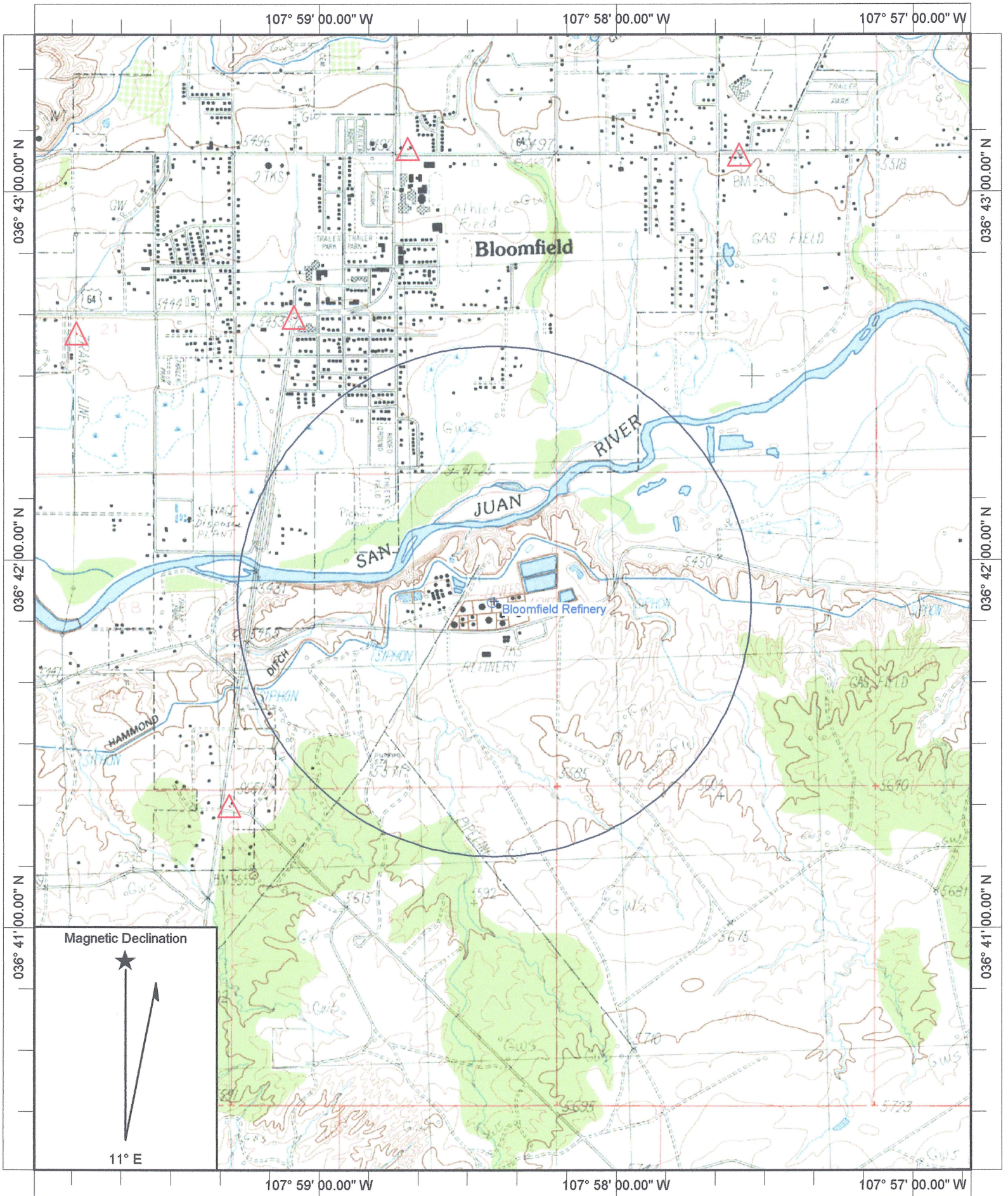
Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

A map is included in this section.



Name: BLOOMFIELD
Date: 1/16/2009
Scale: 1 inch equals 2000 feet

Location: 036° 41' 53.10" N 107° 58' 22.94" W NAD83
Caption: Western Refining Southwest Bloomfield Refinery
Public Notice

Datum: NAD83

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)
(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

☑ **I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"**
This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. ☐ A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
2. ☐ A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. ☐ A copy of the property tax record (20.2.72.203.B NMAC).
4. ☐ A sample of the letters sent to the owners of record.
5. ☐ A sample of the letters sent to counties, municipalities, and Indian tribes.
6. ☐ A sample of the public notice posted and a verification of the local postings.
7. ☐ A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. ☐ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. ☐ A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
10. ☐ A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
11. ☐ A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

N/A – This application is being submitted under 20.2.70 NMAC.

Section 10

Written Description of the Routine Operations of the Facility

---

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

The facility receives material via pipelines or trucks (i.e. directly from trucks and not via the loading rack); stores material in storage tanks; and loads material out via the loading rack or elsewhere at the facility.

Section 11
Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

A. Identify the emission sources evaluated in this section (list and describe)**:**
See UA-2, Table 2-A.

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

☑ **Yes** ☐ **No**

Common Ownership or Control: Surrounding or associated sources are under common ownership or control as this source.

☑ **Yes** ☐ **No**

Contiguous or Adjacent: Surrounding or associated sources are contiguous or adjacent with this source.

☑ **Yes** ☐ **No**

C. Make a determination:

☑ The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is:

- ☐ **a minor PSD source before and after this modification (if so, delete C and D below).**
- ☐ **a major PSD source before this modification. This modification will make this a PSD minor source.**
- ☐ **an existing PSD Major Source that has never had a major modification requiring a BACT analysis.**
- ☐ **an existing PSD Major Source that has had a major modification requiring a BACT analysis**
- ☐ **a new PSD Major Source after this modification.**

B. **This facility [is or is not] one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions** for this modification are **[significant or not significant]. [Discuss why.] The "project" emissions listed below [do or do not] only result from changes described in this permit application, thus no emissions from other [revisions or modifications, past or future] to this facility. Also, specifically discuss whether this project results in "de-bottlenecking", or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:**

a. **NOx: XX.X TPY**
b. **CO: XX.X TPY**
c. **VOC: XX.X TPY**
d. **SOx: XX.X TPY**
e. **TSP (PM): XX.X TPY**
f. **PM10: XX.X TPY**
g. **PM2.5: XX.X TPY**
h. **Fluorides: XX.X TPY**
i. **Lead: XX.X TPY**
j. **Sulfur compounds (listed in Table 2): XX.X TPY**
k. **GHG: XX.X TPY**

C. **Netting [is required, and analysis is attached to this document.] OR [is not required (project is not significant)] OR [Applicant is submitting a PSD Major Modification and chooses not to net.]**

D. **BACT** is **[not required for this modification, as this application is a minor modification.] OR [required, as this application is a major modification. List pollutants subject to BACT review and provide a full top down BACT determination.]**

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table 1 – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered.

N/A – This application is being submitted under 20.2.70 NMAC.

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

Table for STATE REGULATIONS:

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of regulated air contaminants, and is implemented through 20.2.72 NMAC.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any excess emissions. Since regulated sources at the facility are subject to emissions limits under a permit or numerical emissions standards in a federal or state regulation, this part applies. The facility will also notify the NMED of any excess emission per 20.2.7.110 NMAC.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	No affected equipment at facility.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	No affected equipment at facility.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This facility is not a natural gas processing plant that uses a Sulfur Recovery Unit to reduce sulfur emissions; therefore, this regulation does not apply.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	**These regulations were repealed by the Environmental Improvement Board. Combustion emission sources subject to 20.2.37 NMAC before the repeal are now subject to 20.2.61 NMAC.**
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	The facility is not subject to 20.38.109 NMAC as it is no longer a petroleum processing facility and it is also not a petroleum production facility. Accordingly, the facility is no longer subject to 20.2.38 NMAC.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	No affected equipment at facility.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	B-502A, P-521, P-521A, P-526	Units B-502A, P-521, P-521A, and P-526 are subject to this regulation as the facility is no longer subject to 20.2.37 NMAC. Andeavor will operate those unit in compliance with the 20% opacity limit..
20.2.70 NMAC	Operating Permits	Yes	Facility	The facility is a Title V major source and, therefore, subject to the requirements of 20.2.70 NMAC. The facility is Title V major for VOCs.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	Facility is subject to 20.2.70 NMAC and is in turn subject to 20.2.71 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility is subject to 20.2.72 NMAC and has been issued NSR permit 0402M12R4.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable reporting requirements under 20.2.73.300.B.1 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Yes	Facility	The facility is a PSD Major source. The facility is PSD major for VOCs. It is a PSD listed sources (Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels). The facility has not completed a major modification and, therefore, does not require a PSD permit.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes the guidelines and requirements for construction permitting fees. This facility is subject to 20.2.72 NMAC and is in turn subject to 20.2.75 NMAC. This facility is exempt from annual fees under this part (20.2.75.11.E NMAC) as it is subject to fees pursuant to 20.2.71 NMAC.

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.77 NMAC	New Source Performance	Yes	B-502A, Various tanks under EG-1, as described in current Title V permit table 104.B	This is a stationary source subject to requirements of 40 CFR Part 60, as amended through January 15, 2017.
20.2.78 NMAC	Emission Standards for HAPS	Yes (potentially)	Facility	This facility potentially emits hazardous air pollutants which are subject to the requirements of 40 CFR Part 61, as amended through January 15, 2017. The subpart does not apply under routine operating conditions; NESHAP Subpart M would apply in the case of asbestos demolition
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	This regulation establishes the requirements for obtaining a nonattainment area permit. Facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. This regulation does not apply as all stacks at the facility will follow good engineering practices.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	P-521, P-521A, P-526, TLR-1, EG-1, F-1, and various tanks under EG-1, as described in current Title V permit table 104.B	This is a stationary source subject to requirements of 40 CFR Part 63, as amended through January 15, 2017.

Table for Applicable FEDERAL REGULATIONS:

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines national ambient air quality standards. The facility meets all applicable national ambient air quality standards for NO_x, CO, SO_2, H_2S, PM_{10}, and $PM_{2.5}$ under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	B-502A, Various tanks under EG-1, as described in current Title V permit table 104.B	Applies because other NSPS subparts apply to portions of this facility.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	No affected equipment at facility.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR60.40b Subpart Db	**Electric Utility Steam Generating Units**	No	N/A	No affected equipment at facility.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	B-502A	Unit B-502A is a steam generating unit for which construction, modification or reconstruction commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 MW (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).
NSPS 40 CFR 60, Subpart K	Standards of Performance for **Storage Vessels for Petroleum Liquids** for Which Construction, Reconstruction, or Modification Commenced **after** June 11, 1973, and **Prior** to May 19, 1978	Yes	Various tanks under EG-1, as described in current Title V permit table 104.B	Facility has storage vessels that potentially meet the applicability requirements of this Subpart per current Title V permit table 104.B.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for **Storage Vessels for Petroleum Liquids** for which Construction, Reconstruction, or Modification Commenced **After** May 18, 1978, and **Prior** to July 23, 1984	Yes	Various tanks under EG-1, as described in current Title V permit table 104.B	Facility has storage vessels that potentially meet the applicability requirements of this Subpart per current Title V permit table 104.B.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984	Yes	Various tanks under EG-1, as described in current Title V permit table 104.B	Facility has storage vessels that potentially meet the applicability requirements of this Subpart per current Title V permit table 104.B.
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	No	N/A	No affected equipment at facility.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	No	N/A	This facility is not an onshore natural gas processing plant; therefore, it is exempt from the provisions of this subpart.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	This facility is not an onshore natural gas processing plant; therefore, it is exempt from the provisions of this subpart.
40 CFR 60 Subpart XX	Standards of Performance for Bulk Gasoline Terminals	No	N/A	The tank truck loading rack (TLR-1) is not subject to 40 CFR 60, Subpart XX because it was constructed prior to December 17, 1980 and has not been modified after December 17, 1980. Note: The addition of unloading emissions to the loading rack does not constitute a modification of the gasoline loading rack.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N.A	This regulation establishes standards of performance for crude oil and natural gas production, transmission and distribution. The facility does not have any affected units that have been modified or reconstructed on or after August 23, 2011 and before September 18, 2015. [40 CFR 60.5360]
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	No	N/A	This regulation establishes standards of performance for crude oil and natural gas production, transmission and distribution. The facility does not have any affected units that have been modified or reconstructed on or after September 18, 2015.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	No affected equipment at facility.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	No affected equipment at facility.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	No affected equipment at facility.
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	No affected equipment at facility.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	No affected equipment at facility.
NESHAP 40 CFR 61 Subpart A	General Provisions	Yes (potentially)	Facility	Applies if NESHAP Subpart M applies.
NESHAP 40 CFR 61 Subpart M	National Emission Standard for **Asbestos**	Yes (potentially)	Facility	Does not apply under routine operating conditions; Would apply in the case of asbestos demolition.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	No	N/A	This regulation establishes national emission standards for equipment leaks (fugitive emission sources). The facility does not have equipment that operates in volatile hazardous air pollutant (VHAP) service [40 CFR Part 61.240]. The regulated activities subject to this regulation do not take place at this facility. The facility is not subject to this regulation.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	P-521, P-521A, P-526, TLR-1, EG-1, F-1, and various tanks under EG-1, as described in current Title V permit table 104.B	Applies if any other Subpart in 40 CFR 63 applies. This subpart applies because MACT ZZZZ and BBBBBB apply to units at the facility.
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	No	N/A	No affected equipment at facility.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities	No	N/A	This facility is not a major source of hazardous air pollutants (HAP) emissions as defined in §63.1271; therefore, this subpart does not apply.
MACT 40 CFR 63 Subpart EEEE	National Emissions Standard for Hazardous Air Pollutants: Organic Liquid Distribution (Non-Gasoline) (**OLD MACT**)	No	N/A	Previously, this subpart applied to the following: truck unloading, transfer rack, and equipment leak components in organic liquids service that are associated with transfer rack. The facility became subject to this regulation when it was a major source of HAPs and the affected equipment remains subject in the current Title V permit despite the facility becoming an area source of HAPs pursuant to the MACT "Once In, Always In" Provision. With the January 25, 2018 withdrawal of the "Once In, Always In" Provision, the facility is no longer subject to this subpart.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	No affected equipment at facility.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	No affected equipment at facility.
MACT 40 CFR 63 Subpart BBBBBB	National Emissions Standards for Hazardous Air Pollutants for Source Category: **Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities**	Yes	TLR-1, EG-1, F-1, and various tanks under EG-1, as described in current Title V permit table 104.B	The facility is a gasoline distribution bulk terminal and an area source of HAPS. Accordingly, it is subject to this Subpart.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	P-521, P-521A, & P-526	Units P-521, P-521A, P-526, the emergency fire water pumps, are existing (construction commenced prior to June 12, 2006) emergency stationary RICE located at an area source of HAPs. The engines must comply with the emission limitations in 40 CFR 63.6603 and Table 2d of the subpart.
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	Facility's truck loading rack (TLR-1) is controlled by a vapor recovery unit (VRU) during gasoline loading and is potentially subject to this part, but pursuant to 40 CFR 64.2(b)(1)(vi) is exempt because the VRU exhaust stream is equipped with a CEMS as required by the current Title V permit P024-R2M1.

FEDERAL REGULATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 68	**Chemical Accident Prevention**	No	N/A	This facility does not handle more than a threshold quantity of a regulated substance in a process, as determined under §68.115.
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This part establishes the acid rain program. This part does not apply because the facility is not covered by this regulation. [40 CFR Part 72.6]
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	This regulation establishes sulfur dioxide allowance emissions for certain types of facilities. This part does not apply because the facility is not the type covered by this regulation [40 CFR Part 73.2].
Title IV-Acid Rain 40 CFR 75	**Continuous Emissions Monitoring**	No	N/A	Facility does not generate commercial electric power or electric power for sale.
Title IV – Acid Rain 40 CFR 76	**Acid Rain** Nitrogen Oxides **Emission Reduction Program**	No	N/A	This regulation establishes an acid rain nitrogen oxides emission reduction program. This regulation applies to each coal-fired utility unit that is subject to an acid rain emissions limitation or reduction requirement for SO_2. This part does not apply because the facility does not operate any coal-fired units [40 CFR Part 76.1].
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	No	N/A	Not Applicable – facility does not “service”, “maintain” or “repair” class I or class II appliances nor “disposes” of the appliances per the definitions under this subpart.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

☑ **Title V Sources** (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☐ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☑ **Title V** (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Startup and shutdown procedures are either based on manufacturer's recommendations or based on Western's experience with specific equipment. These procedures are designed to proactively address the potential for malfunction to the greatest extent possible. These procedures dictate a sequence of operations that are designed to minimize emissions from the facility during events that result in shutdown and subsequent startup.

Equipment located at this facility is equipped with various safety devices and features that aid in the prevention of excess emissions in the event of an operational emergency. If an operational emergency does occur and excess emissions occur, Western will submit the required Excess Emissions Report as per 20.2.7 NMAC. Corrective action to eliminate the excess emissions and prevent recurrence in the future will be undertaken as quickly as safety allows.

Western has developed an Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies as required by 20.2.70.300.D.5 NMAC. This plan is kept on site and will be made available to the Department upon request.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: https://www.env.nm.gov/aqb/permit/aqb_pol.html. Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title "Construction Scenarios", specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc.

The term "alternative operating scenario" is not defined by regulation. Western understands this term to apply to a source which may routinely operate with alternative fuels or processes in such a manner as to potentially affect emissions. Based on this understanding, this facility has no alternative operating scenarios.

Units at the facility may be shut down from time to time due to factors including but not limited to market demand, maintenance, malfunctions, and emergency shutdowns. Temporary shutdowns are not alternative operating scenarios as Western understands the term.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	X
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.
☐ See attached, approved modeling **waiver for some** pollutants from the facility.
☐ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.
☑ No modeling is required.

This application is being submitted under 20.2.70 NMAC. Modeling is not required for Title V applications.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
B-502A	Tested in accordance with EPA test method for NOx as required by NSR Permit 0402-M12R2	10/1/13
S-1 S-2	N/A – No test requirement.	N/A
API	N/A – No test requirement.	N/A
TLR-1	Tested in accordance with EPA test method for TOC as required by Operating Permit P024-M1 and 40 CFR 63, Subpart CC.	05/04/00
EG1	N/A – No test requirement.	N/A
F-1	N/A – No test requirement.	N/A

Section 19

Requirements for Title V Program

Who Must Use this Attachment:

* Any major source as defined in 20.2.70 NMAC.
* Any source, including an area source, subject to a standard or other requirement promulgated under Section 111 - Standards of Performance for New Stationary Sources, or Section 112 Hazardous Air Pollutants, of the 1990 federal Clean Air Act ("federal Act"). Non-major sources subject to Sections 111 or 112 of the federal Act are exempt from the obligation to obtain an 20.2.70 NMAC operating permit until such time that the EPA Administrator completes rulemakings that require such sources to obtain operating permits. In addition, sources that would be required to obtain an operating permit solely because they are subject to regulations or requirements under Section 112(r) of the federal Act are exempt from the requirement to obtain an Operating Permit.
* Any Acid Rain source as defined under title IV of the federal Act. The Acid Rain program has additional forms. See http://www.env.nm.gov/aqb/index.html. Sources that are subject to both the Title V and Acid Rain regulations are encouraged to submit both applications simultaneously.
* Any source in a source category designated by the EPA Administrator ("Administrator"), in whole or in part, by regulation, after notice and comment.

19.1 - 40 CFR 64, Compliance Assurance Monitoring (CAM) (20.2.70.300.D.10.e NMAC)

Any source subject to 40CFR, Part 64 (Compliance Assurance Monitoring) must submit all the information required by section 64.7 with the operating permit application. The applicant must prepare a separate section of the application package for this purpose; if the information is already listed elsewhere in the application package, make reference to that location. Facilities not subject to Part 64 are invited to submit periodic monitoring protocols with the application to help the AQB to comply with 20.2.70 NMAC. Sources subject to 40 CFR Part 64, must submit a statement indicating your source's compliance status with any enhanced monitoring and compliance certification requirements of the federal Act.

Not applicable as facility is not subject to 40 CFR 64 (CAM). Facility's truck loading rack (TLR-1) is controlled by a vapor recovery unit (VRU) during gasoline loading and is potentially subject to CAM, but pursuant to 40 CFR 64.2(b)(1)(vi), it is exempt because the VRU exhaust stream is equipped with a CEMS as required by the current Title V permit P024-R2M1.

19.2 - Compliance Status (20.2.70.300.D.10.a & 10.b NMAC)

Describe the facility's compliance status with each applicable requirement at the time this permit application is submitted. This statement should include descriptions of or references to all methods used for determining compliance. This statement should include descriptions of monitoring, recordkeeping and reporting requirements and test methods used to determine compliance with all applicable requirements. Refer to Section 2, Tables 2-N and 2-O of the Application Form as necessary. (20.2.70.300.D.11 NMAC) For facilities with existing Title V permits, refer to most recent Compliance Certification for existing requirements. Address new requirements such as CAM, here, including steps being taken to achieve compliance.

Based on information available and after reasonable inquiry, Western believes that the facility is in compliance with all requirements applicable to the facility.

19.3 - Continued Compliance (20.2.70.300.D.10.c NMAC)

Provide a statement that your facility will continue to be in compliance with requirements for which it is in compliance at the time of permit application. This statement must also include a commitment to comply with other applicable requirements as they come into effect during the permit term. This compliance must occur in a timely manner or be consistent with such schedule expressly required by the applicable requirement.

As described in Section 19.2, the facility believes that it is in compliance with all applicable requirements. Western states that it will continue to operate the Bloomfield Products Terminal in compliance with applicable requirements for which it is in compliance as of the date of this application.

Additionally, Western will meet any additional requirements that become effective during the permit term. Compliance will be achieved in a timely manner or on the schedule explicitly required by the applicable regulation. In the event Western discovers new information affecting the compliance status of the facility, Western will make appropriate notifications and/or take corrective actions, as appropriate.

19.4 - Schedule for Submission of Compliance (20.2.70.300.D.10.d NMAC)

You must provide a proposed schedule for submission to the department of compliance certifications during the permit term. This certification must be submitted annually unless the applicable requirement or the department specifies a more frequent period. A sample form for these certifications will be attached to the permit.

Compliance Certifications are submitted annually, as required by Title V permit P024-R2M1 Condition B112.D

19.5 - Stratospheric Ozone and Climate Protection

In addition to completing the four (4) questions below, you must submit a statement indicating your source's compliance status with requirements of Title VI, Section 608 (National Recycling and Emissions Reduction Program) and Section 609 (Servicing of Motor Vehicle Air Conditioners).

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1. Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substances? ☑ **Yes** ☐ **No**

2. Does any air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs? ☐ **Yes** ☑ **No**

   (If the answer is yes, describe the type of equipment and how many units are at the facility.)

3. Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 82. 152)? ☐ **Yes** ☑ **No**

4. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G.)

The facility includes appliances containing regulated refrigerants; however, the facility is not subject to the requirements of 40 CFR 82 as the facility does not “service”, “maintain” or “repair” class I or class II appliances nor “disposes” of the appliances per the definitions under this subpart. Outside companies that utilize certified technicians will complete services and repairs of the air conditioners at the facility.

19.6 - Compliance Plan and Schedule

Applications for sources, which are not in compliance with all applicable requirements at the time the permit application is submitted to the department, must include a proposed compliance plan as part of the permit application package. This plan shall include the information requested below:

A. Description of Compliance Status: (20.2.70.300.D.11.a NMAC)
A narrative description of your facility's compliance status with respect to all applicable requirements (as defined in 20.2.70 NMAC) at the time this permit application is submitted to the department.

B. Compliance plan: (20.2.70.300.D.11.B NMAC)
A narrative description of the means by which your facility will achieve compliance with applicable requirements with which it is not in compliance at the time you submit your permit application package.

C. Compliance schedule: (20.2.70.300D.11.c NMAC)
A schedule of remedial measures that you plan to take, including an enforceable sequence of actions with milestones, which will lead to compliance with all applicable requirements for your source. This schedule of compliance must be at least as stringent as that contained in any consent decree or administrative order to which your source is subject. The obligations of any consent decree or administrative order are not in any way diminished by the schedule of compliance.

D. Schedule of Certified Progress Reports: (20.2.70.300.D.11.d NMAC)
A proposed schedule for submission to the department of certified progress reports must also be included in the compliance schedule. The proposed schedule must call for these reports to be submitted at least every six (6) months.

E. Acid Rain Sources: (20.2.70.300.D.11.e NMAC)
If your source is an acid rain source as defined by EPA, the following applies to you. For the portion of your acid rain source subject to the acid rain provisions of title IV of the federal Act, the compliance plan must also include any additional requirements under the acid rain provisions of title IV of the federal Act. Some requirements of title IV regarding the schedule and methods the source will use to achieve compliance with the acid rain emissions limitations may supersede the requirements of title V and 20.2.70 NMAC. You will need to consult with the Air Quality Bureau permitting staff concerning how to properly meet this requirement.

NOTE: The Acid Rain program has additional forms. See http://www.env.nm.gov/aqb/index.html. Sources that are subject to both the Title V and Acid Rain regulations are **encouraged** to submit both applications **simultaneously**.

Based on available information and belief formed after reasonable inquiry, Western states that the Bloomfield Products Terminal is in compliance with all applicable requirements. No compliance plan, compliance schedule, or compliance reports are required at this time.

19.7 - 112(r) Risk Management Plan (RMP)

Any major sources subject to section 112(r) of the Clean Air Act must list all substances that cause the source to be subject to section 112(r) in the application. The permittee must state when the RMP was submitted to and approved by EPA.

The facility previously filed RMP with EPA as follows:

- Initial submission on 06/18/99; approved by EPA on 07/09/99.
- 5-year Update submission on 06/16/04; approved by EPA on 07/15/04
- 5-year Update submission on 06/17/09; acknowledged by EPA on 06/17/09.

Please note that the facility, as authorized by NSR Permit 0402-M12R4, no longer has more than a threshold quantity of a regulated substance in a process and accordingly is no longer required to have an RMP. Accordingly, in October 2012, Western submitted an RMP program De-registration form to EPA's RMP Reporting Center.

19.8 - Distance to Other States, Bernalillo, Indian Tribes and Pueblos

Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B NMAC)?

(If the answer is yes, state which apply and provide the distances.)

States: Colorado (~33.5km); **Indian Tribes**: Navajo Nation (~25km); Ute Mountain (~29km); Southern Ute (~30km); Jicarilla Apache (~70km)

19.9 - Responsible Official

Tommy D. Roberts, Terminal Supervisor
P: (505) 632-4195
P.O. Box 159
50 County Road 4990 Bloomfield, NM 87413

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

No other relevant information.

Section 22: Certification

Company Name: WESTERN REFINING TERMINALS, LLC
WESTERN REFINING SOUTHWEST, INC.

I, Tommy Dale Roberts, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 1 day of MARCH, 2019, upon my oath or affirmation, before a notary of the State of NEW MEXICO.

Tommy Roberts
*Signature

3-1-2019
Date

Tommy Dale Roberts
Printed Name

Supervisor
Title

Scribed and sworn before me on this 1 day of MARCH, 2019.

My authorization as a notary of the State of NEW MEXICO expires on the 15th day of May, 2021.

Michelle L. Maes
Notary's Signature

3-1-19
Date

Michelle L. Maes
Notary's Printed Name

OFFICIAL SEAL
MICHELLE L. MAES
Notary Public
State of New Mexico
My Commission Expires 5-15-21

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.