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		

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.

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.

☐ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

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.): **106**	Updating Permit/NOI #: **P119-R2**
1	Facility Name: **Cannon Air Force Base**	Plant primary SIC Code (4 digits): **9711** Plant NAIC code (6 digits): **928110**	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): **27 SOCES/CEIE, 506 N. Air Commando Way, Cannon AFB, NM 88103**		
2	Plant Operator Company Name: **N/A**	Phone/Fax: **N/A**	
a	Plant Operator Address: **N/A**		
b	Plant Operator's New Mexico Corporate ID or Tax ID: **N/A**		

3	Plant Owner(s) name(s): **U.S. Air Force/Cannon AFB**	Phone/Fax: (**575) 915-5624 / (575) 784-0078**
a	Plant Owner(s) Mailing Address(s): **27 SOCES/CEIE, 506 N. Air Commando Way, Cannon AFB, NM 88103**	
4	Bill To (Company): **U.S. Air Force/Cannon AFB**	Phone/Fax: **(575) 904-6735 /(575) 784-0078**
a	Mailing Address: **27 SOCES/CEIE, 506 N. Air Commando Way, Cannon AFB, NM 88103**	E-mail: **sara.newton@us.af.mil**
5	☑ Preparer: **Versar, Inc**. ☑ Consultant: **Versar, Inc.**	Phone/Fax: **(301) 304-3124**
a	Mailing Address: **20250 Century Blvd. Suite 150, Germantown MD, 20874**	E-mail: **tsletten@versar.com**
6	Plant Operator Contact: **N/A**	Phone/Fax: **N/A**
a	Address: **N/A**	E-mail: **N/A**
7	Air Permit Contact: Sara Newton	Title: **Air Quality Program Manager**
a	E-mail: **sara.newton@us.af.mil**	Phone/Fax: (**575) 915-5624**
b	Mailing Address: **27 SOCES/CEIE, 506 N. Air Commando Way, Cannon AFB, NM 88103**	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

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: **P119-R2**
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: **1517M5R1 through R14**
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☑ No	If yes, the register No. is:

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: **N/A**	Daily: **N/A**	Annually: **N/A**
b	Proposed	Hourly: **N/A**	Daily: **N/A**	Annually: **N/A**
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: **N/A**	Daily: **N/A**	Annually: **N/A**
b	Proposed	Hourly: **N/A**	Daily: **N/A**	Annually: **N/A**

Section 1-D: Facility Location Information

1	Section:**30 & 19**	Range: **35 East**	Township: **2 North**	County: **Curry**	Elevation (ft): **4,272**
2	UTM Zone: ☐ 12 or ☑ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☑ WGS 84	
a	UTM E (in meters, to nearest 10 meters): **654,998**			UTM N (in meters, to nearest 10 meters): **3,805,630**	
b	**AND** Latitude (deg., min., sec.): **34° 22' 49.6"**			Longitude (deg., min., sec.): **103° 18' 50.8"**	
3	Name and zip code of nearest New Mexico town: **Clovis, 88101**				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): **Begin at the intersection of 7th and Main Streets in Clovis, NM. 1. Start out going WEST on E 7TH ST. (2.4 mi) 2. Turn SLIGHT RIGHT onto US-60 W / US-84 N. (4.1 mi) 3. Take the ramp toward CANNON AFB (0.1 mi).**				
5	The facility is **6.7 miles** (distance) miles **west** (direction) of **Clovis, NM** (nearest town).				
6	Status of land at facility (check one): ☐ Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☑ Other (**Federal/Military**)				
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: **Municipality: Clovis, Portales County: Curry, Roosevelt**				
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.env.nm.gov/air-quality/modeling-publications/)? ☐ Yes ☑ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:				
9	Name nearest Class I area: **Salt Creek**				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): **125.6 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: **50 meters**				
12	Method(s) used to delineate the Restricted Area: **Continuous Fencing** "**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: **Existing Source**					
4	Month and year of anticipated construction completion: **Existing Source**					
5	Month and year of anticipated startup of new or modified facility: **Existing Source**					
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: **Xcel Energy** 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 (R.O.) (20.2.70.300.D.2 NMAC): **Colonel Terence G. Taylor**	Phone: **(575) 784-2727**
a	R.O. Title: **Commander**, **27th Special Operations Wing**	R.O. e-mail: terence.taylor@us.af.mil
b	R. O. Address: **27 SOW/CC 100 S. Air Commando Way, Cannon AFB, NM 88103**	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): **Richard L. Masters**	Phone: **(575) 784-2755**
a	A. R.O. Title: **Director of Staff, 27th Special Operations Wing**	A. R.O. e-mail: richard.masters.4@us.af.mil
b	A. R. O. Address: **27 SOW/CV, 100 S. Air Commando Way, Cannon AFB, NM 88103**	
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): **N/A**	
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.): **United States Air Force**	
a	Address of Parent Company: **27 SOCES/CC, 506 N. Air Commando Way, Cannon AFB, NM 88103**	
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.): **N/A**	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: **Sara Newton, (575) 915-5624**	
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: **Cannon AFB is located approximately 16 miles (26 km) west of the Texas border.**	

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 should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. 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. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these 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. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☑ CD/DVD attached to paper application

☐ secure electronic transfer. Air Permit Contact Name_____, Email_____ Phone number _____.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is 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.

   If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

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

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit 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. 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 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). 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 number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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Section 2

Tables

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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.
~~14001~~	~~Heater, Building 199~~	~~Hastings~~	~~L-240-105-8628~~	~~41794-2~~	~~8.628 MMBtu/hr~~	429.42 ~~10^6 scf/yr~~ 164.68 10^6 scf/yr	~~-~~ / ~~1992~~	~~N/A~~ / ~~21001~~	~~10300603~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
~~14002~~	~~Heater, Building 199~~	~~Hastings~~	~~L-240-105-8628~~	~~41793-2~~	~~8.628 MMBtu/hr~~		~~-~~ / ~~1992~~	~~N/A~~ / ~~21001~~	~~10300603~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
~~14003~~	~~Heater, Building 199~~	~~Rapids SA Series~~	~~SA89~~	~~919112~~	~~8.25 MMBtu/hr~~		~~-~~ / ~~1992~~	~~N/A~~ / ~~21001~~	~~10300603~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
~~14004~~	~~Heater, Building 199~~	~~Rapids SA Series~~	~~SA89~~	~~919114~~	~~8.25 MMBtu/hr~~		~~-~~ / ~~1992~~	~~N/A~~ / ~~21001~~	~~10300603~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
14007	Heater, Building 4607	Camus	Dyna Force ~~Dyna~~ Series - DRNH-5000-MSI	~~O41215453~~ 52029492	5.0 MMBtu/hr		- / ~~10/15/2012~~ 1/29 2021	N/A / 14007	10300603	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	14007
14008	Heater, Building 4607	Camus	Dyna Force ~~Dyna~~ Series - DRNH-5000-MSI	~~111114765~~ 52029493	5.0 MMBtu/hr		- / ~~10/15/2012~~ 1/29/2021	N/A / 14008	10300603	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	14008
14009	Heater, Building 4607	Camus	Dyna Force ~~Dyna~~ Series - DRNH-5000-MSI	~~111114766~~ 52029491	5.0 MMBtu/hr		- / ~~10/15/2012~~ 1/29/2021	N/A / 14009	10300603	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	14009
14010	Heater/Boiler, Building 4608	Hydro Engineering	~~EHGV~~ 4/3000 EHGV	13090075	~~0.36~~ 0.31 MMBtu/hr		- / 6/30/2014	N/A / 14010	10300603	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
14011	Parachute Drying Tower Heater, Building 680	Rupp Air Systems	CFA-M12	1858977	0.525 MMBtu/hr		Oct-2014 / Aug-2015	N/A / 14011	10300603	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
14012	Paint Booth Heater, Building 4607	~~Weather-Rite~~ Global Finishing Solutions	RAM 25 ~~H2~~	U28183A/1656485	2.0 MMBtu/hr		- / ~~10/15/2012~~ 01/02/2013	N/A / 14012	10300603	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
14013	Heater/Boiler, Building 4608	Hydro Engineering	~~EHGV~~ 4/3000 EHGV	13090076	~~0.36~~ 0.31 MMBtu/hr		- / 6/30/2014	N/A / 14013	10300603	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
14014	Heater/Boiler, Building 375	Unknown	Unknown	Unknown	1.03 MMBtu/hr		- / 1968	N/A / 14014	10300603	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
15001	Fuel Dispensing for Tanks 22001 and 22002	-	-	-	-	1,212,924 gal/yr	- / ~May-2009	N/A / N/A	40600702	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
~~15002~~	~~Fuel Dispensing for Tank 22003~~	~~-~~	~~-~~	~~-~~	~~-~~	~~51,000 gal/yr~~	~~-~~ / ~~4/5/2006~~	~~N/A~~ / ~~N/A~~	~~40600702~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
15003	Fuel Dispensing for Tanks 22004, 22005, and 22006	-	-	-	-	6,387,500 gal/yr	- / 1992	N/A / N/A	40600702	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
16001	Gasoline Distribution Plant	-	-	-	-	~~27,810~~ 65,000 gal/yr	- / ~May-2009	N/A / N/A	40600302	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
19001	RICE - Fire Pump Engine - Bldg. 127	Cummins	NT855F4	11525127	320 hp	500 hr/yr	Mar-1989 / 9/1/1990	N/A / N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A

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.
19002	RICE - Fire Pump Engine - Bldg. 127	Cummins	NT855F4	11511938	320 hp	500 hr/yr	Jan-1989 9/1/1990	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19003	RICE - Fire Pump Engine - Bldg. 127	Detroit	DDFPT6ATLH-7089	6A-466521	~~315~~ 302 ~~hp~~	500 hr/yr	June-1991 8/1/1991	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19004	RICE - Fire Pump Engine - Bldg. 160	John Deere	6068HFC48B	PE6068L226144	224 hp	500 hr/yr	Sept-2012 2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19005	RICE - Fire Pump Engine - Bldg. 179	Cummins	6CTA8.3-G2	46885442	~~252~~ 277 hp	500 hr/yr	2008 12/7/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19006	RICE - Fire Pump Engine - Bldg. 179	Cummins	6CTA8.3-G2	46876079	~~252~~ 277 hp	500 hr/yr	2008 12/7/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19007	RICE - Fire Pump Engine - Bldg. 200	Caterpillar	3306BDI	64Z08130	231 hp	500 hr/yr	4/5/1989 10/1/1990	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19008	RICE - Fire Pump Engine - Bldg. 200	Caterpillar	3306BDI	64Z08332	231 hp	500 hr/yr	5/9/1989 10/1/1990	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19009	RICE - Fire Pump Engine - Bldg. 233	Detroit	DDFP-04AT-R7239	4A-285965	~~216~~ 228 hp	500 hr/yr	Sep-91 8/20/1992	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19010	RICE - Fire Pump Engine - Bldg. 845	John Deere	4045TF290~~C~~	PE4045R938448	74 hp	500 hr/yr	Feb-14 6/4/2014	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19013	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar	3208-DIT	03Z12543	235 hp	500 hr/yr	3/9/1994 2/20/1996	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19014	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar	3208-DIT	03Z12547	235 hp	500 hr/yr	3/10/1994 2/20/1996	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19015	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar	3208-DIT	03Z12545	235 hp	500 hr/yr	3/10/1994 2/20/1996	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19016	RICE - Fire Pump Engine - Bldg. 74605	John Deere	6068HFC48A	PE6068L150056	260 hp	500 hr/yr	1/6/2011 7/1/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19017	RICE - Fire Pump Engine - Bldg. 74605	John Deere	6068HFC48A	PE6068L149039	260 hp	500 hr/yr	Dec-10 7/1/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19018	RICE - Fire Pump Engine - Bldg. 74610	John Deere	6090HFC47A,B	RG6090L117338	~~235~~ 350 hp	500 hr/yr	Sep-13 10/2/2014	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19019	RICE - Fire Pump Engine - Bldg. 74676	John Deere	~~4045HFZ8H~~ 4045HFC28	PE4045L273221	121 hp	500 hr/yr	Mar-2015 8/14/2015	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19020	RICE - Fire Pump Engine - Bldg. 1434	John Deere	4045TF290C	PE4045R977051	37 hp	500 hr/yr	Aug-2015 12/1/2016	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19021 - 190~~23~~25	RICE - Future Fire Pump Engines	TBD	TBD	TBD	500 hp	500 hr/yr	TBD TBD	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19301	RICE - Emergency Generator - Bldg. 10	Cummins	6CTA8.3-G2	46631569	252 hp	500 hr/yr	6/22/2006 10/20/2006	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A

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.
19302	RICE - Emergency Generator - Bldg. 12	Caterpillar	C9	S9L00982	398 hp	500 hr/yr	1/5/2007 10/15/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19303	RICE - Emergency Generator - Bldg. 77	Cummins	4B3.9-G2	46655605	68 hp	500 hr/yr	8/23/2006 2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19304	RICE - Emergency Generator - Bldg. 116	Caterpillar	3412	BPG00402	896 hp	500 hr/yr	2003 4/25/2003	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19305	RICE - Emergency Generator - Bldg. 123	Cummins	QSM11-G4 NR3	35212613	470 hp	500 hr/yr	11/2007 4/14/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19306	RICE - Emergency Generator - Bldg. 128	~~Caterpillar~~ Cummins	~~3406~~ QSB5G13	~~1DZ04164~~ 74384431	~~519 hp~~ 173 hp	500 hr/yr	~~1/6/2002~~ 09/19/2018 ~~8/1/2003~~ 07/01/2020	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19306
19307	RICE - Emergency Generator - Bldg. 135	Cummins	QSM11-G4 NR3	35212810	470 hp	500 hr/yr	11/2007 6/24/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19308	RICE - Emergency Generator - Bldg. 158	Cummins	~~VTA-28-G5~~ QSB7-G5NR3	~~25283911~~ 74399398	~~900 hp~~ 325 hp	500 hr/yr	~~1/2003~~ 2018 ~~7/1/2004~~ 12/08/2021	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19308
19310	RICE - Emergency Generator - Bldg. 216	~~Cummins~~ Kohler	~~4B3.9-G2~~ KD13404TM/G18B	~~46417261~~ 5024701830	~~68 hp~~ 67 hp	500 hr/yr	~~8/2/2004~~ 09/2020 ~~9/21/2004~~ 2/12/2021	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19310
19311	RICE - Emergency Generator - Bldg. 281	Cummins	QSB7-G3 NR3	46916691	250 hp	500 hr/yr	6/30/2008 1/24/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19312	RICE - Emergency Generator - Bldg. 317	Caterpillar	C15	FSE02255	546 hp	500 hr/yr	Sept-2008 8/25/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19313	RICE - Emergency Generator - Bldg. 336	~~Cummins~~ Kubota	~~QSB5-G3 NR3~~ V2203-M-BG-ET02	~~21844691~~ 7JH1743	~~126 hp~~ 36 hp	500 hr/yr	~~3/13/2008~~ 10/31/2018 ~~11/25/2009~~ 08/01/2019	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19313
19314	RICE - Emergency Generator - Bldg. 337	Cummins	QSL9-G3 NR3	46899227	399 hp	500 hr/yr	5/15/2008 8/19/2008	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19315	RICE - Emergency Generator - Bldg. 356	~~Kubota~~ Cummings	~~V2203-BG-ES~~ 4BT3.3G5	~~05L6027~~ 72043010	69 hp	500 hr/yr	~~2005~~ 8/27/2018 ~~9/13/2005~~ 08/01/2019	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19315
19316	RICE - Emergency Generator - Bldg. 575	Caterpillar	3412	BPG02452	~~823~~ 913 hp	500 hr/yr	2004 6/30/2005	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19317	RICE - Emergency Generator - Bldg. 600	Cummins	QSB5-G3 NR3	21844697	126 hp	500 hr/yr	3/13/2008 8/25/2008	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19318	RICE - Emergency Generator - Bldg. 620	Caterpillar	3054C	E4M02853	~~168~~ 158 hp	500 hr/yr	9/16/2006 4/29/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19319	RICE - Emergency Generator - Bldg. 622	Caterpillar	C27	MJE01219	1214 hp	500 hr/yr	2008 8/15/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19320	RICE - Emergency Generator - Bldg. 724	Caterpillar	C9	S9L02284	398 hp	500 hr/yr	~~2011~~ 2009 1/10/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A

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.
19321	RICE - Emergency Generator - Bldg. 724	Caterpillar	C15	FTE00826	~~568~~ 865 hp	500 hr/yr	~~2011~~ 2012 5/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19322	RICE - Emergency Generator - Bldg. 728	~~Cummins~~ Kohler	~~6CTA8.3-G2~~ KD13404TM/G18	~~46317176~~ 4718502540	~~201 hp~~ 94 hp	500 hr/yr	~~06/192003~~ 'Jul-2017 ~~2/5/2004~~ 11/11/2020	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19322
19324	RICE - Emergency Generator - Bldg. 777	Cummins	QSX15-G9 NR2	79503419	755 hp	500 hr/yr	Aug-2011 11/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19325	RICE - Emergency Generator - Bldg. 777	Cummins	QSX15-G9 NR2	79503421	755 hp	500 hr/yr	Aug-2011 11/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19326	RICE - Emergency Generator - Bldg. 777	Cummins	QSX15-G9 NR2	79544951	755 hp	500 hr/yr	Jan-2012 11/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
~~19327~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins~~	~~QSK23-G7 NR2~~	~~00316558~~	~~1220 hp~~	~~500 hr/yr~~	~~6/5/2007~~ ~~9/15/2008~~	~~N/A~~ ~~N/A~~	~~20200107~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~CI~~	~~N/A~~
~~19328~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins~~	~~QSK23-G7 NR2~~	~~00316531~~	~~1220 hp~~	~~500 hr/yr~~	~~5/30/2007~~ ~~9/15/2008~~	~~N/A~~ ~~N/A~~	~~20200107~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~CI~~	~~N/A~~
~~19329~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins~~	~~QSK23-G7 NR2~~	~~00316469~~	~~1220 hp~~	~~500 hr/yr~~	~~5/16/2007~~ ~~9/15/2008~~	~~N/A~~ ~~N/A~~	~~20200107~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~CI~~	~~N/A~~
~~19330~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins~~	~~QSK23-G7 NR2~~	~~00316723~~	~~1220 hp~~	~~500 hr/yr~~	~~7/10/2007~~ ~~9/15/2008~~	~~N/A~~ ~~N/A~~	~~20200107~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~CI~~	~~N/A~~
19331	RICE - Emergency Generator - Bldg. 790 (UPS)	Cummins	QSX15-G9	79419742	755 hp	500 hr/yr	Feb-2010 2/25/2011	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19332	RICE - Emergency Generator - Bldg. 848	Volvo Penta	TWD1643GE	D16*069497*C3*A	917 hp	500 hr/yr	2/13/2013 12/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19333	RICE - Emergency Generator - Bldg. 848	Volvo Penta	TWD1643GE	D16*069803*C3*A	917 hp	500 hr/yr	3/13/2013 12/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19334	RICE - Emergency Generator - Bldg. 848	Volvo Penta	TWD1643GE	D16*069804*C3*A	917 hp	500 hr/yr	3/13/2013 12/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19335	RICE - Emergency Generator - Bldg. 848	Volvo Penta	TWD1643GE	D16*069327*C3*A	917 hp	500 hr/yr	2/13/2013 12/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19338	RICE - Emergency Generator - Bldg. 2134	Cummins	QSB5-G3 NR3	46940148	145 hp	500 hr/yr	9/3/2008 4/1/2009	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19339	RICE - Emergency Generator - Bldg. 2300	Kubota	F2803-EBG	1J0400	~~34~~ 45 ~~hp~~	500 hr/yr	2001 3/13/2002	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19340	RICE - Emergency Generator - Bldg. 2302	~~Kubota~~ Cummings	~~F2803~~ 4BT3.3G5	~~1J1294~~ 72042999	~~34 hp~~ 69 hp	500 hr/yr	~~2001~~ 2018 ~~3/7/2002~~ 8/1/2019	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19340
19341	RICE - Emergency Generator - Bldg. 2358 (DASR)	John Deere	4045HF285	PE4045L099988	~~158~~ 139 hp	500 hr/yr	11/4/2009 5/15/2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19342	RICE - Emergency Generator - Bldg. 2360	Cummins	QSB5-G3 NR3	46738406	145 hp	500 hr/yr	4/10/2007 7/16/2007	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19343	RICE - Emergency Generator - Bldg. 2373	Cummins	QSX15-G9	79393155	755 hp	500 hr/yr	Sep-2009 2/4/2010	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19344	RICE - Emergency Generator - Bldg. 3010	Perkins	CM51035	U219524M	27 hp	500 hr/yr	2005 1/11/2006	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A

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.
19345	RICE - Emergency Generator - Bldg. 3033	Perkins	CM51035	U218926L	27 hp	500 hr/yr	2004 1/11/2006	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19347	RICE - Emergency Generator - Bldg. 3060	Kubota	~~D1703~~ D1703-M-BG-ET01	~~01C0107~~ 7JS7930	~~20 hp~~ 27 hp	500 hr/yr	2018 6/18/2021	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	19347
19356	RICE - Emergency Generator - Bldg. 4085	MTU-DD (Detroit Diesel)	12V2000G85-TB	5352011323	1193 hp	500 hr/yr	Oct-2012 7/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19357	RICE - Emergency Generator - Bldg. 4086	Perkins	YD51206	U838110L	168 hp	500 hr/yr	2004 4/12/2005	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19358	RICE - Emergency Generator - Bldg. 4606	Cummins	QSB5-G3 NR3	73315969	145 hp	500 hr/yr	10/17/2011 5/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19359	RICE - Emergency Generator - Bldg. 4607	Cummins	QSB7-G5 NR3	73314473	324 hp	500 hr/yr	10/13/2011 2/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19360	RICE -Future Emergency Generator - Bldg. 4626	TBD	TBD	TBD	500 hp	500 hr/yr	TBD TBD	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19361	RICE - Emergency Generator - Bldg. 4734	Kubota	V3300-BG-ET01	2DE1903	49 hp	500 hr/yr	2013 12/1/2013	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19362	RICE - Emergency Generator - Bldg. 5038	Cummins	QSL9-G2 NR3	46875394	364 hp	500 hr/yr	3/18/2008 2008	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19363	RICE - Emergency Generator - Bldg. 9971	Cummins	6BT5.9-G6	46251765	170 hp	500 hr/yr	~~TBD~~ 9/10/2002 10/4/2004	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19364	RICE - Emergency Generator - Bldg. 9973	Cummins	6CTA8.3-G2	46654695	252 hp	500 hr/yr	8/22/2006 10/19/2006	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19365	RICE - Emergency Generator - Bldg. 74618	Cummins	QSX15-G9	79606085	755 hp	500 hr/yr	~~TBD~~ Aug-2012 ~~8/1/2012~~ Sept-2012	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19366	RICE - Emergency Generator - Building 2295 ~~AOS Tower~~	Kohler	~~Kohler/40RE0ZK~~ KDI3404TM/G18B	4715902850	67 hp	500 hr/yr	June-2017 11/2017	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19367	RICE - Emergency Generator - Bldg. 4904	Cummins	QSX15-G9	80069558	755 hp	500 hr/yr	May-18 May-19	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19368	RICE - Emergency Generator - Bldg. 102	John Deere	6068HF285	PE6068N013303	237 hp	500 hr/yr	2019 9/4/2020	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
19369	RICE - Emergency Generator - Bldg. 3050	Kohler	KDI2504ESM	4433801480	39.9 hp	500 hr/yr	2014 5/14/2021	N/A N/A	20200107	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
~~19366 - 19375~~ 19370 - 19379	RICE -Future Emergency Generator	TBD	TBD	TBD	500 hp	500 hr/yr	TBD TBD	N/A N/A	20200107	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
21003	Paint Booth - Building 375	Miscellaneous Parts	-	-	-	-	Jan-68 Jan-68	21003 21003	40200101	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
21005	Aircraft Paint Booth - Building 4607	Miscellaneous Parts	-	-	-	-	TBD ~12/2012	21005 21005	40200101	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

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.
21006	Parts Paint Booth - Building 4607	Global Finish Solutions	IDB-3012	Unknown	-	-	TBD ~12/2012	21006 21006	40200101	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
22001	E-85 Storage Tank 313	TESCA	STI-F911 UL-142	Unknown	12,000 gallon	606,462 gal/yr	~ 5/2009 ~ 5/2009	N/A N/A	40400497, 40400498	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
22002	Gasoline Storage Tank 314	TESCA	STI-F911 UL-142	Unknown	12,000 gallon	606,462 gal/yr	~ 5/2009 ~ 5/2009	N/A N/A	40400403, 40400404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
~~22003~~	~~Gasoline Storage Tank 374~~	~~-~~	~~-~~	~~-~~	~~300 gallon~~	~~51,000 gal/yr~~	~~N/A~~ ~~4/25/2014~~	~~N/A~~ ~~N/A~~	~~40400403, 40400404~~	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	~~N/A~~	~~N/A~~
22004	Underground Gasoline Storage Tank 1111R	-	-	-	10,000 gallon	3,650,000 gal/yr	~2013 Jan-14	N/A N/A	40400404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
22005	Underground Gasoline Storage Tank 1111M	-	-	-	10,000 gallon	1,825,000 gal/yr	~2013 Jan-14	N/A N/A	40400404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
22006	Underground Gasoline Storage Tank 1111P	-	-	-	10,000 gallon	912,500 gal/yr	~2013 Jan-14	N/A N/A	40400404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
31999	Miscellaneous Chemical Use	-	-	-	-	-	- -	N/A N/A	2465000000	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

[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

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 https://www.env.nm.gov/wp-content/uploads/sites/2/2017/10/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. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check One
N/A	Abrasive Blasting (Enclosed)	N/A	N/A N/A	N/A N/A	20.2.72.202.B(7) IA List Item #1.a	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	External Combustion - multiple small comfort heating units	N/A	N/A N/A	N/A N/A	20.2.72.202.B(1)(a) IA List Item #3 and 4	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fire Fighter Training	N//A	N/A N/A	N/A N/A	20.2.72.202.A(4) IA List Item #1.a	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Cell Maintenance	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Dispensing - Diesel and Jet Fuel	N/A	N/A N/A	N/A N/A	20.2.72.202.B(2) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Equipment Leaks	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) IA List Item #1.a	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Loading - Diesel and Jet Fuel	N/A	N/A N/A	N/A N/A	20.2.72.202.B(2) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Spills	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Storage Tanks - Diesel and Jet Fuel	N/A	N/A N/A	N/A N/A	20.2.72.202.B(2) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Fuel Transfers	N/A	N/A N/A	N/A N/A	20.2.72.202.B(2) IA List Item #5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Non-Destructive Inspection	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) IA List Item #1.a	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Portable Generators	N/A	N/A N/A	N/A N/A	20.2.72.202.B(3) & A(5) IA List Item #6	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Aerospace Ground Equipment	N/A	N/A N/A	N/A N/A	20.2.72.202.A(13) IA List Item #6	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Solvent Cleaners (Paint Gun Cleaners and Degreasers)	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) IA List Item #1.a and 5	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Small Arms Training/Firing Range	N/A	N/A N/A	N/A N/A	200.2.72.202.A(5) IA List Item #1.a		☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Welding Operations	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) N/A IA List Item #1.a	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
N/A	Woodworking Operations	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) N/A IA List Item #1.a	N/A N/A	☑ 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
21003	Dry filter paint booth system.	~01/1968	PM, including some HAP and TAP species.	21003	*	Test Data
21005	Dry filter paint booth system.	~12/2012	PM, including some HAP and TAP species.	21005	*	Test Data
21006	Dry filter paint booth system.	~12/2012	PM, including some HAP and TAP species.	21006	*	Test Data

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

* Please see worksheet "Surface Coating (Controls)" for detailed information.

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		PM[1]		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
14007	0.49	2.15	0.41	1.80	0.03	0.12	0.003	0.013	0.04	0.16	0.037	0.16	0.037	0.16	-	-	-	-
14008	0.49	2.15	0.41	1.80	0.03	0.12	0.003	0.013	0.04	0.16	0.037	0.16	0.037	0.16	-	-	-	-
14009	0.49	2.15	0.41	1.80	0.03	0.12	0.003	0.013	0.04	0.16	0.037	0.16	0.037	0.16	-	-	-	-
14010	0.03	0.13	0.03	0.11	0.002	0.01	0.0002	0.001	0.002	0.01	0.002	0.01	0.002	0.01	-	-	-	-
14011	0.05	0.23	0.04	0.19	0.003	0.01	0.0003	0.001	0.004	0.02	0.004	0.02	0.004	0.02				
14012	0.20	0.86	0.16	0.72	0.01	0.05	0.0012	0.005	0.015	0.07	0.015	0.07	0.015	0.07	-	-	-	-
14013	0.03	0.13	0.03	0.11	0.002	0.01	0.0002	0.0008	0.002	0.01	0.002	0.01	0.002	0.01	-	-	-	-
14014	0.10	0.44	0.08	0.37	0.01	0.02	0.001	0.0027	0.008	0.03	0.008	0.03	0.008	0.03				
15001 & 15003	-	-	-	-	10.15	44.46	-	-	-	-	-	-	-	-	-	-	-	-
16001	-	-	-	-	0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-
19001	9.92	2.48	2.14	0.53	0.81	0.20	0.66	0.16	0.70	0.18	0.70	0.18	0.70	0.18	-	-	-	-
19002	9.92	2.48	2.14	0.53	0.81	0.20	0.66	0.16	0.70	0.18	0.70	0.18	0.70	0.18	-	-	-	-
19003	9.36	2.34	2.02	0.50	0.76	0.19	0.62	0.15	0.66	0.17	0.66	0.17	0.66	0.17	-	-	-	-
19004	1.48	0.37	1.28	0.32	0.56	0.14	0.46	0.11	0.07	0.02	0.07	0.02	0.07	0.02	-	-	-	-
19005	4.76	1.19	1.59	0.40	0.70	0.17	0.57	0.14	0.24	0.06	0.24	0.06	0.24	0.06	-	-	-	-
19006	4.76	1.19	1.59	0.40	0.70	0.17	0.57	0.14	0.24	0.06	0.24	0.06	0.24	0.06	-	-	-	-
19007	7.16	1.79	1.54	0.39	0.58	0.15	0.47	0.12	0.51	0.13	0.51	0.13	0.51	0.13	-	-	-	-
19008	7.16	1.79	1.54	0.39	0.58	0.15	0.47	0.12	0.51	0.13	0.51	0.13	0.51	0.13	-	-	-	-
19009	7.07	1.77	1.52	0.38	0.57	0.14	0.47	0.12	0.50	0.13	0.50	0.13	0.50	0.13	-	-	-	-
19010	0.57	0.14	0.60	0.15	0.19	0.05	0.15	0.04	0.05	0.01	0.05	0.01	0.05	0.01	-	-	-	-
19013	7.29	1.82	1.57	0.39	0.59	0.15	0.48	0.12	0.52	0.13	0.52	0.13	0.52	0.13	-	-	-	-
19014	7.29	1.82	1.57	0.39	0.59	0.15	0.48	0.12	0.52	0.13	0.52	0.13	0.52	0.13	-	-	-	-
19015	7.29	1.82	1.57	0.39	0.59	0.15	0.48	0.12	0.52	0.13	0.52	0.13	0.52	0.13	-	-	-	-
19016	1.72	0.43	1.49	0.37	0.66	0.16	0.53	0.13	0.09	0.02	0.09	0.02	0.09	0.02	-	-	-	-
19017	1.72	0.43	1.49	0.37	0.66	0.16	0.53	0.13	0.09	0.02	0.09	0.02	0.09	0.02	-	-	-	-
19018	2.31	0.58	2.01	0.50	0.88	0.22	0.72	0.18	0.12	0.03	0.12	0.03	0.12	0.03	-	-	-	-
19019	0.80	0.20	0.99	0.25	0.30	0.08	0.25	0.06	0.06	0.01	0.06	0.01	0.06	0.01	-	-	-	-
19020	0.46	0.11	0.05	0.01	0.09	0.02	0.08	0.02	0.02	0.00	0.02	0.00	0.02	0.00	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM[1]		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
19021 - 19025	16.53	4.13	14.33	3.58	6.30	1.58	5.13	1.28	0.83	0.21	0.83	0.21	0.83	0.21	-	-	-	-
19301	3.83	0.96	4.72	1.18	0.64	0.16	0.52	0.13	0.22	0.06	0.22	0.06	0.22	0.06	-	-	-	-
19302	2.63	0.66	2.28	0.57	1.00	0.25	0.82	0.20	0.13	0.03	0.13	0.03	0.13	0.03	-	-	-	-
19303	1.03	0.26	0.45	0.11	0.17	0.04	0.14	0.03	0.15	0.04	0.15	0.04	0.15	0.04	-	-	-	-
19304	21.50	5.38	4.93	1.23	0.57	0.14	0.01	0.00	0.63	0.16	0.63	0.16	0.63	0.16	-	-	-	-
19305	3.11	0.78	2.69	0.67	1.18	0.30	0.96	0.24	0.16	0.04	0.16	0.04	0.16	0.04	-	-	-	-
19306	1.14	0.29	1.41	0.35	0.44	0.11	0.35	0.09	0.08	0.02	0.08	0.02	0.08	0.02	-	-	-	-
19307	3.11	0.78	2.69	0.67	1.18	0.30	0.96	0.24	0.16	0.04	0.16	0.04	0.16	0.04	-	-	-	-
19308	2.15	0.54	1.86	0.47	0.82	0.20	0.67	0.17	0.11	0.03	0.11	0.03	0.11	0.03	-	-	-	-
19310	0.52	0.13	0.55	0.14	0.17	0.04	0.14	0.03	0.04	0.01	0.04	0.01	0.04	0.01	-	-	-	-
19311	1.65	0.41	1.43	0.36	0.63	0.16	0.51	0.13	0.08	0.02	0.08	0.02	0.08	0.02	-	-	-	-
19312	3.61	0.90	3.13	0.78	1.38	0.34	1.12	0.28	0.18	0.05	0.18	0.05	0.18	0.05	-	-	-	-
19313	0.28	0.07	0.33	0.08	0.09	0.02	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
19314	2.64	0.66	2.29	0.57	1.01	0.25	0.82	0.20	0.13	0.03	0.13	0.03	0.13	0.03	-	-	-	-
19315	0.53	0.13	0.56	0.14	0.17	0.04	0.14	0.04	0.05	0.01	0.05	0.01	0.05	0.01	-	-	-	-
19316	21.91	5.48	5.02	1.26	0.59	0.15	0.01	0.00	0.64	0.16	0.64	0.16	0.64	0.16	-	-	-	-
19317	0.83	0.21	1.03	0.26	0.32	0.08	0.26	0.06	0.06	0.02	0.06	0.02	0.06	0.02	-	-	-	-
19318	2.40	0.60	1.06	0.26	0.40	0.10	0.32	0.08	0.35	0.09	0.35	0.09	0.35	0.09	-	-	-	-
19319	12.85	3.21	6.96	1.74	0.78	0.19	0.01	0.00	0.40	0.10	0.40	0.10	0.40	0.10	-	-	-	-
19320	2.63	0.66	2.28	0.57	1.00	0.25	0.82	0.20	0.13	0.03	0.13	0.03	0.13	0.03	-	-	-	-
19321	9.15	2.29	4.96	1.24	0.55	0.14	0.01	0.00	0.29	0.07	0.29	0.07	0.29	0.07	-	-	-	-
19322	0.73	0.18	0.77	0.19	0.24	0.06	0.19	0.05	0.06	0.02	0.06	0.02	0.06	0.02	-	-	-	-
19324	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19325	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19326	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19331	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19332	9.70	2.43	5.26	1.31	0.59	0.15	0.01	0.00	0.30	0.08	0.30	0.08	0.30	0.08	-	-	-	-
19333	9.70	2.43	5.26	1.31	0.59	0.15	0.01	0.00	0.30	0.08	0.30	0.08	0.30	0.08	-	-	-	-
19334	9.70	2.43	5.26	1.31	0.59	0.15	0.01	0.00	0.30	0.08	0.30	0.08	0.30	0.08	-	-	-	-
19335	9.70	2.43	5.26	1.31	0.59	0.15	0.01	0.00	0.30	0.08	0.30	0.08	0.30	0.08	-	-	-	-
19338	0.96	0.24	1.18	0.30	0.37	0.09	0.30	0.07	0.07	0.02	0.07	0.02	0.07	0.02	-	-	-	-
19339	1.40	0.35	0.30	0.08	0.11	0.03	0.09	0.02	0.10	0.02	0.10	0.02	0.10	0.02	-	-	-	-
19340	0.53	0.13	0.56	0.14	0.17	0.04	0.14	0.04	0.05	0.01	0.05	0.01	0.05	0.01	-	-	-	-
19341	0.92	0.23	1.13	0.28	0.35	0.09	0.28	0.07	0.07	0.02	0.07	0.02	0.07	0.02	-	-	-	-
19342	0.96	0.24	1.18	0.30	0.37	0.09	0.30	0.07	0.07	0.02	0.07	0.02	0.07	0.02	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM[1]		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
19343	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19344	0.84	0.21	0.18	0.05	0.07	0.02	0.06	0.01	0.06	0.01	0.06	0.01	0.06	0.01	-	-	-	-
19345	0.84	0.21	0.18	0.05	0.07	0.02	0.06	0.01	0.06	0.01	0.06	0.01	0.06	0.01	-	-	-	-
19347	0.21	0.05	0.24	0.06	0.07	0.02	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
19356	12.62	3.16	6.84	1.71	0.77	0.19	0.01	0.00	0.39	0.10	0.39	0.10	0.39	0.10	-	-	-	-
19357	5.21	1.30	1.12	0.28	0.42	0.11	0.34	0.09	0.37	0.09	0.37	0.09	0.37	0.09	-	-	-	-
19358	0.96	0.24	1.18	0.30	0.37	0.09	0.30	0.07	0.07	0.02	0.07	0.02	0.07	0.02	-	-	-	-
19359	2.14	0.54	1.86	0.46	0.82	0.20	0.66	0.17	0.11	0.03	0.11	0.03	0.11	0.03	-	-	-	-
19360	3.31	0.83	2.87	0.72	1.26	0.32	1.03	0.26	0.17	0.04	0.17	0.04	0.17	0.04	-	-	-	-
19361	0.60	0.15	0.44	0.11	0.12	0.03	0.10	0.03	0.05	0.01	0.05	0.01	0.05	0.01	-	-	-	-
19362	2.41	0.60	2.09	0.52	0.92	0.23	0.75	0.19	0.12	0.03	0.12	0.03	0.12	0.03	-	-	-	-
19363	5.27	1.32	1.14	0.28	0.43	0.11	0.35	0.09	0.37	0.09	0.37	0.09	0.37	0.09	-	-	-	-
19364	3.83	0.96	4.72	1.18	0.64	0.16	0.52	0.13	0.22	0.06	0.22	0.06	0.22	0.06	-	-	-	-
19365	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19366	0.71	0.18	0.38	0.10	0.17	0.04	0.14	0.03	0.02	0.01	0.02	0.01	0.02	0.01	-	-	-	-
19367	7.99	2.00	4.33	1.08	0.48	0.12	0.01	0.00	0.25	0.06	0.25	0.06	0.25	0.06	-	-	-	-
19368	1.57	0.39	1.36	0.34	0.60	0.15	0.49	0.12	0.08	0.02	0.08	0.02	0.08	0.02	-	-	-	-
19369	0.31	0.08	0.36	0.09	0.10	0.03	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
19370 - 19379	33.07	8.27	28.66	7.16	12.60	3.15	10.25	2.56	1.65	0.41	1.65	0.41	1.65	0.41	-	-	-	-
21003	-	-	-	-	83.16	8.78	-	-	38.96	4.12	35.51	3.75	3.59	0.38	-	-	-	-
21005 & 21006	-	-	-	-	172.34	18.16	-	-	51.19	8.26	46.66	7.53	4.72	0.76	-	-	-	-
22001	-	-	-	-	0.61	2.67	-	-	-	-	-	-	-	-	-	-	-	-
22002	-	-	-	-	0.61	2.67	-	-	-	-	-	-	-	-	-	-	-	-
22004	-	-	-	-	0.73	3.20	-	-	-	-	-	-	-	-	-	-	-	-
22005	-	-	-	-	0.47	2.06	-	-	-	-	-	-	-	-	-	-	-	-
22006	-	-	-	-	0.36	1.59	-	-	-	-	-	-	-	-	-	-	-	-
31999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	381.10	103.04	203.31	57.35	325.35	98.40	39.02	9.80	108.35	17.52	100.37	16.42	26.51	6.28	0.00	0.00	0.00	0.00

[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 PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Surface Coating lb/hr emission rates for EU 21003, 21005, & 21006, are taken from individual paint booth calculations, done in a separate spreadsheet

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		PM[1]		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
14007-14014	-	8.23	-	6.92	-	0.45	-	0.05	-	0.63	-	0.63	-	0.63	-	-	-	-
15001, 15003	-	-	-	-	-	44.46	-	-	-	-	-	-	-	-	-	-	-	-
16001	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	-	-	-
19001- 19020, 19301 - 19379	-	94.81	-	50.43	-	14.19	-	9.75	-	4.51	-	4.51	-	4.51	-	-	-	-
21003, 21005, 21006	-	-	-	-	-	26.94	-	-	-	0.91	-	0.91	-	0.54	-	-	-	-
22001, 22002, 22004 - 22006	-	-	-	-	-	12.19	-	-	-	-	-	-	-	-	-	-	-	-
31999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	103.04	-	57.35	-	98.40	-	9.80	-	6.05	-	6.05	-	5.68	-	-	-	-

[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 PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 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 scheduled 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		PM[2]		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
N/A - No additional emissions expected during startup, shutdown, and routine maintenance																		
Totals																		

[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.

[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 PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

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		PM		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
N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals:		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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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	Height Above	Temp.	Flow Rate		Moisture by	Velocity	Inside Diameter (ft)
			(Yes or No)	Ground (ft)	(F)	(acfs)	(dscfs)	Volume (%)	(ft/sec)	
14007	14007	V	Yes	50	100	20.9	N/A	Ambient	26.5	1.00
14008	14008	V	Yes	50	100	20.9	N/A	Ambient	26.5	1.00
14009	14009	V	Yes	50	100	20.9	N/A	Ambient	26.5	1.00
14010	14010	V	Yes	50	100	21.0	N/A	Ambient	26.7	1.00
14011	14011	N/A (see note)	N/A (see note)	N/A (see note)	123	75.0	N/A	Ambient	N/A (see note)	N/A (see note)
14012	14012	V	Yes	25	70	450.0	N/A	Ambient	91.7	2.50
14013	14013	V	Yes	50	100	21.0	N/A	Ambient	26.7	1.00
14014	14014	TBD	TBD	25	TBD	TBD	N/A	Ambient	TBD	TBD
127	19001	V	No	14	890	40.2	N/A	Ambient	294.5	0.42
127	19002	V	No	14	890	40.2	N/A	Ambient	294.5	0.42
127	19003	V	No	17	860	25.7	N/A	Ambient	294.2	0.33
160	19004	H	No	20	848	25.2	N/A	Ambient	289.0	0.33
179	19005	V	No	6	1045.4	20.4	N/A	Ambient	233.9	0.33
179	19006	V	No	6	1045.4	20.4	N/A	Ambient	233.9	0.33
200	19007	V	No	14	1050.8	7.2	N/A	Ambient	53.1	0.42
200	19008	V	No	13	1050.8	7.2	N/A	Ambient	83.0	0.33
233	19009	V	No	16	860	16.8	N/A	Ambient	192.3	0.33
845	19010	H	No	12	790	8.7	N/A	Ambient	177.8	0.25
3208	19013	H	No	17	976	29.0	N/A	Ambient	332.3	0.33
3208	19014	H	No	17	976	29.0	N/A	Ambient	332.3	0.33
3208	19015	H	No	17	976	29.0	N/A	Ambient	332.3	0.33
74605	19016	V	No	2	961	23.3	N/A	Ambient	267.3	0.33
74605	19017	V	No	13	961	23.3	N/A	Ambient	267.3	0.33
74610	19018	V	No	18	891	34.1	N/A	Ambient	173.8	0.50
4676	19019	H	No	11	1076	15.9	N/A	Ambient	182.0	0.33
1434	19020	V	No	20	TBD	TBD	N/A	Ambient	TBD	0.27
10	19301	V	No	6	1045.4	20.4	N/A	Ambient	233.9	0.33
12	19302	V	No	10	852	37.4	N/A	Ambient	274.5	0.42

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps	Height Above	Temp.	Flow Rate		Moisture by	Velocity	Inside Diameter (ft)
			(Yes or No)	Ground (ft)	(F)	(acfs)	(dscfs)	Volume (%)	(ft/sec)	
77	19303	H	No	6	770	2.5	N/A	Ambient	50.9	0.25
116	19304	V	No	12	788	57.2	N/A	Ambient	104.8	0.83
123	19305	V	No	11	1015	39.2	N/A	Ambient	354.7	0.38
128	19306	V	No	7	913	14.6	N/A	Ambient	219.0	0.29
135	19307	V	No	12	1015	39.2	N/A	Ambient	354.7	0.38
158	19308	V	No	10	988	25.8	N/A	Ambient	233.7	0.38
216	19310	V	No	6	914	4.8	N/A	Ambient	54.6	0.33
281	19311	V	No	9	988	25.8	N/A	Ambient	295.9	0.33
317	19312	V	No	8	940.5	22.2	N/A	Ambient	63.7	0.67
336	19313	H	No	5	TBD	TBD	N/A	Ambient	TBD	0.25
337	19314	V	No	10	1105	36.1	N/A	Ambient	413.4	0.33
356	19315	H	No	5	879	5.3	N/A	Ambient	107.0	0.25
575	19316	V	No	12	788	57.2	N/A	Ambient	163.8	0.67
600	19317	H	No	8	988	25.8	N/A	Ambient	526.0	0.25
620	19318	V	No	7	942.8	9.7	N/A	Ambient	197.8	0.25
622	19319	V	No	14	949.8	94.1	N/A	Ambient	479.2	0.50
724	19320	V	No	13	852	37.4	N/A	Ambient	190.6	0.50
724	19321	V	No	11	940.5	22.2	N/A	Ambient	63.7	0.67
728	19322	V	No	5	914	8.4	N/A	Ambient	171.5	0.25
777	19324	V	No	12	909	64.1	N/A	Ambient	153.5	0.73
777	19325	V	No	12	909	64.1	N/A	Ambient	153.5	0.73
777	19326	V	No	12	909	64.1	N/A	Ambient	153.5	0.73
790	19331	V	No	17	909	64.1	N/A	Ambient	326.4	0.50
848	19332	V	No	10	792	70.0	N/A	Ambient	128.4	0.83
848	19333	V	No	10	792	70.0	N/A	Ambient	128.4	0.83
848	19334	V	No	10	792	70.0	N/A	Ambient	128.4	0.83
848	19335	V	No	10	792	70.0	N/A	Ambient	128.4	0.83
2134	19338	H	No	7	988	25.8	N/A	Ambient	295.9	0.33
2300	19339	H	No	8	970	3.6	N/A	Ambient	104.1	0.21
2302	19340	H	No	8	825	4.8	N/A	Ambient	221.5	0.17
2358	19341	V	No	11	855	14.8	N/A	Ambient	169.0	0.33

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps	Height Above	Temp.	Flow Rate		Moisture by	Velocity	Inside Diameter (ft)
			(Yes or No)	Ground (ft)	(F)	(acfs)	(dscfs)	Volume (%)	(ft/sec)	
2360	19342	V	No	13	844	12.3	N/A	Ambient	250.0	0.25
2373	19343	V	No	12	909	64.1	N/A	Ambient	326.4	0.50
3010	19344	V	No	8	950	2.8	N/A	Ambient	128.3	0.17
3033	19345	V	No	8	950	2.8	N/A	Ambient	128.3	0.17
3060	19347	H	No	6	TBD	TBD	N/A	Ambient	TBD	0.17
4085	19356	V	No	12	1076	102.4	N/A	Ambient	751.0	0.42
4086	19357	V	No	10	1250	20.1	N/A	Ambient	45.5	0.75
4606	19358	H	No	8	988	25.8	N/A	Ambient	386.4	0.29
4607	19359	V	No	8	988	25.8	N/A	Ambient	295.9	0.33
4734	19361	H	No	7	735	3.7	N/A	Ambient	74.4	0.25
5038	19362	V	No	8	1105	36.1	N/A	Ambient	540.0	0.29
9971	19363	V	No	7	1023	16.6	N/A	Ambient	486.4	0.21
9973	19364	V	No	5	1045	20.4	N/A	Ambient	149.7	0.42
74618	19365	V	No	11	909	64.1	N/A	Ambient	326.4	0.50
2295	19366	V	No	6	914	4.8	N/A	Ambient	97.8	0.25
4904	19367	V	No	12	910	64.1	N/A	Ambient	183.6	0.67
102	19368	V	No	8	916	19.4	N/A	Ambient	222.5	0.33
3050	19369	V	No	8	1058	3.5	N/A	Ambient	162.0	0.17
21003	21003	H	No	22	75	147.5	N/A	Ambient	1.3	2 x 2
21005	21005	V	Yes	12	75	550.0	N/A	Ambient	30.0	22 x 2
21006	21006	V	Yes	57	75	53.1	N/A	Ambient	38.2	1.30
Note: The products of combustion go out the hot air duct and are then re-circulated back to the fire box. The hot/warm air exit duct is located at the top of the unit (approx. 15 ft AGL).										

Stack No.	Unit No.(s)	Total HAPs		Toluene ☑ HAP or ☐ TAP		Ethylbenzene ☑ HAP or ☐ TAP		Propylene Glycol Methyl Ether ☑ HAP or ☐ TAP		Xylene ☑ HAP or ☐ TAP		Methanol ☑ HAP or ☐ TAP		Methyl Isobutyl Ketone ☑ 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
21003	21003	125.04	13.2	51.98	5.49	7.21	0.761	-	-	33.64	3.55	20.79	2.196	11.42	1.21
21005	21005	58.28	7.72	11.90	1.18	7.95	1.00	10.07	1.61	11.03	1.25	-	-	17.33	2.69
21006	21006	25.09	3.31	5.1	0.504	3.522	0.429	4.314	0.69	4.73	0.53	-	-	7.43	1.15
N/A	15001, 15003	0.101	0.442	0.072	0.313	0.0047	0.021	-	-	0.025	0.108	-	-	-	-
N/A	22001	0.006	0.027	0.004	0.019	0.00028	0.0012	-	-	0.0015	0.0065	-	-	-	-
N/A	22002	0.006	0.027	0.004	0.019	0.0003	0.001	-	-	0.001	0.006	-	-	-	-
N/A	22004	0.007	0.032	0.005	0.023	0.0003	0.001	-	-	0.002	0.008	-	-	-	-
N/A	22005	0.005	0.021	0.003	0.015	0.0002	0.001	-	-	0.001	0.005	-	-	-	-
N/A	22006	0.004	0.016	0.003	0.011	0.0002	0.001	-	-	0.001	0.004	-	-	-	-
N/A	16001	0.000	0.002	0.000	0.001	0.00002	0.0001	-	-	0.0001	0.0004	-	-	-	-
Totals:[1]		208.5	24.8	69.1	7.6	18.7	2.2	14.4	2.3	49.4	5.5	20.8	2.2	36.2	5.1

[1] The current Title V permit limits HAP emissions to 9.9 tpy for each individual HAP and 24.9 tpy for all HAPs combined. Cannon AFB requests the same HAP limits (9.9 and 24.9 tpy) in this permit renewal.

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
14007	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	4,897 scf/hr	42.9 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14008	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	4,897 scf/hr	42.9 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14009	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	4,897 scf/hr	42.9 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14010	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	354 scf/hr	3.1 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14011	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	514 scf/hr	4.5 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14012	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	1945 scf/hr	17.04MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14013	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	354 scf/hr	3.1 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
14014	Pipeline Quality Natural Gas	Pipeline Quality	1,020 Btu/scf	970 scf/hr	8.5 MMscf/yr	Max: 20 grains per 100 scf *	Negligible
19001	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	16.4 gal/hr	8175 gal/yr	0.0015	Negligible
19002	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	16.4 gal/hr	8175 gal/yr	0.0015	Negligible
19003	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	16.1 gal/hr	7715 gal/yr	0.0015	Negligible
19004	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	10.1 gal/hr	5723 gal/yr	0.0015	Negligible
19005	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.9 gal/hr	7077 gal/yr	0.0015	Negligible
19006	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.9 gal/hr	7077 gal/yr	0.0015	Negligible
19007	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	14.4 gal/hr	5901 gal/yr	0.0015	Negligible
19008	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	14.4 gal/hr	5901 gal/yr	0.0015	Negligible
19009	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	11.0 gal/hr	5825 gal/yr	0.0015	Negligible
19010	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	3.8 gal/hr	1891 gal/yr	0.0015	Negligible
19013	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	6004 gal/yr	0.0015	Negligible
19014	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	6004 gal/yr	0.0015	Negligible
19015	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	6004 gal/yr	0.0015	Negligible
19016	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	6642 gal/yr	0.0015	Negligible
19017	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	6642 gal/yr	0.0015	Negligible
19018	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.0 gal/hr	8942 gal/yr	0.0015	Negligible
19019	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	6.2 gal/hr	3091 gal/yr	0.0015	Negligible
19020	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.9 gal/hr	945 gal/yr	0.0015	Negligible
19021-19025	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	25.5 gal/hr	12,774 gal/yr (each)	0.0015	Negligible
19301	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	10.3 gal/hr	6438 gal/yr	0.0015	Negligible
19302	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	20.3 gal/hr	10168 gal/yr	0.0015	Negligible
19303	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	3.5 gal/hr	1737 gal/yr	0.0015	Negligible

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
19304	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	45.8 gal/hr	22891 gal/yr	0.0015	Negligible
19305	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	24.0 gal/hr	12007 gal/yr	0.0015	Negligible
19306	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	26.5 gal/hr	4420 gal/yr	0.0015	Negligible
19307	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	24.0 gal/hr	12007 gal/yr	0.0015	Negligible
19308	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	41.1 gal/hr	8303 gal/yr	0.0015	Negligible
19310	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	3.5 gal/hr	1712 gal/yr	0.0015	Negligible
19311	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.8 gal/hr	6387 gal/yr	0.0015	Negligible
19312	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	27.9 gal/hr	13949 gal/yr	0.0015	Negligible
19313	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	6.4 gal/hr	920 gal/yr	0.0015	Negligible
19314	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	20.4 gal/hr	10193 gal/yr	0.0015	Negligible
19315	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.4 gal/hr	1763 gal/yr	0.0015	Negligible
19316	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	42.1 gal/hr	23325 gal/yr	0.0015	Negligible
19317	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	6.4 gal/hr	3219 gal/yr	0.0015	Negligible
19318	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	8.6 gal/hr	4036 gal/yr	0.0015	Negligible
19319	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	62.0 gal/hr	31015 gal/yr	0.0015	Negligible
19320	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	20.3 gal/hr	10168 gal/yr	0.0015	Negligible
19321	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	44.2 gal/hr	22099 gal/yr	0.0015	Negligible
19322	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	14.2 gal/hr	2401 gal/yr	0.0015	Negligible
19324	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19325	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19326	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19331	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19332	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	46.9 gal/hr	23427 gal/yr	0.0015	Negligible
19333	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	46.9 gal/hr	23427 gal/yr	0.0015	Negligible
19334	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	46.9 gal/hr	23427 gal/yr	0.0015	Negligible
19335	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	46.9 gal/hr	23427 gal/yr	0.0015	Negligible
19338	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	7.4 gal/hr	3704 gal/yr	0.0015	Negligible
19339	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.7 gal/hr	1150 gal/yr	0.0015	Negligible
19340	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.7 gal/hr	1763 gal/yr	0.0015	Negligible
19341	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	8.1 gal/hr	3551 gal/yr	0.0015	Negligible
19342	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	7.4 gal/hr	3704 gal/yr	0.0015	Negligible
19343	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible

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
19344	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.4 gal/hr	690 gal/yr	0.0015	Negligible
19345	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.4 gal/hr	690 gal/yr	0.0015	Negligible
19347	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	1.4 gal/hr	690 gal/yr	0.0015	Negligible
19356	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	61.0 gal/hr	30478 gal/yr	0.0015	Negligible
19357	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	8.6 gal/hr	4292 gal/yr	0.0015	Negligible
19358	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	6.7 gal/hr	3704 gal/yr	0.0015	Negligible
19359	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	15.1 gal/hr	8277 gal/yr	0.0015	Negligible
19360	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	25.5 gal/hr	12774 gal/yr	0.0015	Negligible
19361	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	2.5 gal/hr	1252 gal/yr	0.0015	Negligible
19362	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	18.6 gal/hr	9299 gal/yr	0.0015	Negligible
19363	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	8.7 gal/hr	4343 gal/yr	0.0015	Negligible
19364	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	11.8 gal/hr	6438 gal/yr	0.0015	Negligible
19365	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19366	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.2 gal/hr	1712 gal/yr	0.0015	Negligible
19367	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	38.6 gal/hr	19288 gal/yr	0.0015	Negligible
19368	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	12.1 gal/hr	6055 gal/yr	0.0015	Negligible
19369	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	2.0 gal/hr	1019 gal/yr	0.0015	Negligible
19370 - 19379	Ultra Low Sulfur Diesel (ULSD)	Purchased Commercial	137,000 Btu/gal	25.5 gal/hr (each)	12,774 gal/yr (each)	0.0015	Negligible

Notes:

* Natural gas sulfur content is represented as a maximum of 20 grains per 100 standard cubic foot as stated in Cannon AFB's NSR Permit #1517-M5

The following equation was used to calculate hourly fuel use for ICOM emission units (19001 - 19025 and 19301 - 19375):

Hourly fuel use = hp * Brake specific fuel consumption (7000 Btu/hp-hr) * 1/HV (Btu/gal)

The following equation was used to calculate hourly fuel use for ECOM emission units (14007 - 14014)

Hourly fuel use = annual fuel usage (MM scf/yr) / max hours of operation (8760 hr/yr

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)
22001	40400497, 40400498	E85/Gasoline	E85/Gasoline	6.5	56	55.35	0.56	62.28	0.71
22002	40400403, 40400404	Gasoline	Gasoline	5.6	66	55.35	4.74	62.28	4.12
22004	40400404	Gasoline	Gasoline	5.6	66	55.35	4.74	62.28	4.12
22005	40400404	Gasoline	Gasoline	5.6	66	55.35	4.74	62.28	4.12
22006	40400404	Gasoline	Gasoline	5.6	66	55.35	4.74	62.28	4.12

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-LR below)	Roof Type (refer to Table 2-LR 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			
22001	~ 5/2009	E85/Gasoline	N/A	FX	286	45	3.08	28.33	WH	WH	Good	606,462	50.54
22002	~ 5/2009	Gasoline	N/A	FX	286	45	3.08	28.33	WH	WH	Good	606,462	50.54
22004	Jan-14	Gasoline	N/A	FX	238	38	2.9	N/A	N/A	N/A	N/A	3,650,000	365.00
22005	Jan-14	Gasoline	N/A	FX	238	38	2.9	N/A	N/A	N/A	N/A	1,825,000	182.50
22006	Jan-14	Gasoline	N/A	FX	238	38	2.9	N/A	N/A	N/A	N/A	912,500	91.25

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)
	N/A - Cannon AFB is not a manufacturing or production facility.						

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
	N/A - No CEM Equipment Installed at Cannon AFB								

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
	N/A - Parametric Emissions Measurement Equipment not Required							

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**										
14007	**mass GHG**	2,576.9	0.00486	0.04857											2,576.9	
	CO2e	2,576.9	1.45	1.21												2,579.5
14008	**mass GHG**	2,576.9	0.00486	0.04857											2,576.9	
	CO2e	2,576.9	1.45	1.21												2,579.5
14009	**mass GHG**	2,576.9	0.00486	0.04857											2,576.9	
	CO2e	2,576.9	1.45	1.21												2,579.5
14010	**mass GHG**	159.8	0.00030	0.00301											159.8	
	CO2e	159.8	0.09	0.08												159.9
14011	**mass GHG**	270.6	0.00051	0.00510											270.6	
	CO2e	270.6	0.15	0.13												270.9
14012	**mass GHG**	1,030.7	0.00194	0.01943											1,030.8	
	CO2e	1,030.7	0.58	0.49												1,031.8
14013	**mass GHG**	159.8	0.00030	0.00301											159.8	
	CO2e	159.8	0.09	0.08												159.9
14014	**mass GHG**	530.8	0.00100	0.01000											530.8	
	CO2e	530.8	0.30	0.25												531.4
19001	**mass GHG**	92.0	0.00075	0.00373											92.0	
	CO2e	92.0	0.22	0.09												92.3
19002	**mass GHG**	92.0	0.00075	0.00373											92.0	
	CO2e	92.0	0.22	0.09												92.3
19003	**mass GHG**	86.8	0.00070	0.00352											86.8	
	CO2e	86.8	0.21	0.09												87.1
19004	**mass GHG**	64.4	0.00052	0.00261											64.4	
	CO2e	64.4	0.16	0.07												64.6
19005	**mass GHG**	79.6	0.00065	0.00323											79.6	
	CO2e	79.6	0.19	0.08												79.9
19006	**mass GHG**	79.6	0.00065	0.00323											79.6	
	CO2e	79.6	0.19	0.08												79.9
19007	**mass GHG**	66.4	0.00054	0.00269											66.4	
	CO2e	66.4	0.16	0.07												66.6
19008	**mass GHG**	66.4	0.00054	0.00269											66.4	
	CO2e	66.4	0.16	0.07												66.6
19009	**mass GHG**	65.5	0.00053	0.00266											65.5	
	CO2e	65.5	0.16	0.07												65.8

		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**										
19010	**mass GHG**	21.3	0.00017	0.00086											21.3	
	CO2e	21.3	0.05	0.02												21.3
19013	**mass GHG**	67.5	0.00055	0.00274											67.5	
	CO2e	67.5	0.16	0.07												67.8
19014	**mass GHG**	67.5	0.00055	0.00274											67.5	
	CO2e	67.5	0.16	0.07												67.8
19015	**mass GHG**	67.5	0.00055	0.00274											67.5	
	CO2e	67.5	0.16	0.07												67.8
19016	**mass GHG**	74.7	0.00061	0.00303											74.7	
	CO2e	74.7	0.18	0.08												75.0
19017	**mass GHG**	74.7	0.00061	0.00303											74.7	
	CO2e	74.7	0.18	0.08												75.0
19018	**mass GHG**	100.6	0.00082	0.00408											100.6	
	CO2e	100.6	0.24	0.10												100.9
19019	**mass GHG**	34.8	0.00028	0.00141											34.8	
	CO2e	34.8	0.08	0.04												34.9
19020	**mass GHG**	10.6	0.00009	0.00043											10.6	
	CO2e	10.6	0.03	0.01												10.7
19021 - 19025	**mass GHG**	718.6	0.00583	0.02915											718.6	
	CO2e	718.6	1.74	0.73												721.0
19301	**mass GHG**	72.4	0.00059	0.00294											72.4	
	CO2e	72.4	0.18	0.07												72.7
19302	**mass GHG**	114.4	0.00093	0.00464											114.4	
	CO2e	114.4	0.28	0.12												114.8
19303	**mass GHG**	19.5	0.00016	0.00079											19.5	
	CO2e	19.5	0.05	0.02												19.6
19304	**mass GHG**	257.5	0.00209	0.01045											257.5	
	CO2e	257.5	0.62	0.26												258.4
19305	**mass GHG**	135.1	0.00110	0.00548											135.1	
	CO2e	135.1	0.33	0.14												135.6
19306	**mass GHG**	49.7	0.00040	0.00202											49.7	
	CO2e	49.7	0.12	0.05												49.9
19307	**mass GHG**	135.1	0.00110	0.00548											135.1	
	CO2e	135.1	0.33	0.14												135.6
19308	**mass GHG**	93.4	0.00076	0.00379											93.4	
	CO2e	93.4	0.23	0.09												93.7
19310	**mass GHG**	19.3	0.00016	0.00078											19.3	
	CO2e	19.3	0.05	0.02												19.3
19311	**mass GHG**	71.9	0.00058	0.00291											71.9	
	CO2e	71.9	0.17	0.07												72.1

		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**										
19312	**mass GHG**	156.9	0.00127	0.00637											156.9	
	CO2e	156.9	0.38	0.16												157.5
19313	**mass GHG**	10.3	0.00008	0.00042											10.3	
	CO2e	10.3	0.03	0.01												10.4
19314	**mass GHG**	114.7	0.00093	0.00465											114.7	
	CO2e	114.7	0.28	0.12												115.1
19315	**mass GHG**	19.8	0.00016	0.00080											19.8	
	CO2e	19.8	0.05	0.02												19.9
19316	**mass GHG**	262.4	0.00213	0.01064											262.4	
	CO2e	262.4	0.63	0.27												263.3
19317	**mass GHG**	36.2	0.00029	0.00147											36.2	
	CO2e	36.2	0.09	0.04												36.3
19318	**mass GHG**	45.4	0.00037	0.00184											45.4	
	CO2e	45.4	0.11	0.05												45.6
19319	**mass GHG**	348.9	0.00283	0.01415											349.0	
	CO2e	348.9	0.84	0.35												350.1
19320	**mass GHG**	114.4	0.00093	0.00464											114.4	
	CO2e	114.4	0.28	0.12												114.8
19321	**mass GHG**	248.6	0.00202	0.01008											248.6	
	CO2e	248.6	0.60	0.25												249.5
19322	**mass GHG**	27.0	0.00022	0.00110											27.0	
	CO2e	27.0	0.07	0.03												27.1
19324	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19325	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19326	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19331	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19332	**mass GHG**	263.6	0.00214	0.01069											263.6	
	CO2e	263.6	0.64	0.27												264.5
19333	**mass GHG**	263.6	0.00214	0.01069											263.6	
	CO2e	263.6	0.64	0.27												264.5
19334	**mass GHG**	263.6	0.00214	0.01069											263.6	
	CO2e	263.6	0.64	0.27												264.5
19335	**mass GHG**	263.6	0.00034	0.00169											263.6	
	CO2e	263.6	0.10	0.04												263.7
19338	**mass GHG**	41.7	0.00034	0.00169											41.7	
	CO2e	41.7	0.10	0.04												41.8

		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**										
19339	**mass GHG**	12.9	0.00010	0.00052											12.9	
	CO2e	12.9	0.03	0.01												13.0
19340	**mass GHG**	19.8	0.00016	0.00080											19.8	
	CO2e	19.8	0.05	0.02												19.9
19341	**mass GHG**	40.0	0.00032	0.00162											40.0	
	CO2e	40.0	0.10	0.04												40.1
19342	**mass GHG**	41.7	0.00034	0.00169											41.7	
	CO2e	41.7	0.10	0.04												41.8
19343	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19344	**mass GHG**	7.8	0.00006	0.00031											7.8	
	CO2e	7.8	0.02	0.01												7.8
19345	**mass GHG**	7.8	0.00006	0.00031											7.8	
	CO2e	7.8	0.02	0.01												7.8
19347	**mass GHG**	7.8	0.00006	0.00031											7.8	
	CO2e	7.8	0.02	0.01												7.8
19356	**mass GHG**	342.9	0.00278	0.01391											342.9	
	CO2e	342.9	0.83	0.35												344.1
19357	**mass GHG**	48.3	0.00039	0.00196											48.3	
	CO2e	48.3	0.12	0.05												48.5
19358	**mass GHG**	41.7	0.00034	0.00169											41.7	
	CO2e	41.7	0.10	0.04												41.8
19359	**mass GHG**	93.1	0.00076	0.00378											93.1	
	CO2e	93.1	0.23	0.09												93.4
19360	**mass GHG**	143.7	0.00117	0.00583											143.7	
	CO2e	143.7	0.35	0.15												144.2
19361	**mass GHG**	14.1	0.00011	0.00057											14.1	
	CO2e	14.1	0.03	0.01												14.1
19362	**mass GHG**	104.6	0.00085	0.00424											104.6	
	CO2e	104.6	0.25	0.11												105.0
19363	**mass GHG**	48.9	0.00040	0.00198											48.9	
	CO2e	48.9	0.12	0.05												49.0
19364	**mass GHG**	72.4	0.00059	0.00294											72.4	
	CO2e	72.4	0.18	0.07												72.7
19365	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8
19366	**mass GHG**	19.3	0.00016	0.00078											19.3	
	CO2e	19.3	0.05	0.02												19.3
19367	**mass GHG**	217.0	0.00176	0.00880											217.0	
	CO2e	217.0	0.52	0.22												217.8

		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**										
19368	**mass GHG**	68.1	0.00055	0.00276											68.1	
	CO2e	68.1	0.16	0.07												68.4
19369	**mass GHG**	11.5	0.00009	0.00047											11.5	
	CO2e	11.5	0.03	0.01												11.5
19370-19379	**mass GHG**	1,437.1	0.01166	0.05829											1,437.2	
	CO2e	1,437.1	3.47	1.46												1,442.1
Total	**mass GHG**	19,364.5	0.09375	0.56187											19,365.1	
	CO2e	19,364.5	27.94	14.05												19,406.5

[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.

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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).

The **Process Summary** shall include a brief description of the facility and its processes.

Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions: 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.

3.1 Facility Description and Process

Cannon Air Force Base (AFB) is owned and operated by the United States Air Force (USAF), Special Operations Command (AFSOC). Cannon AFB is located in the high plains of eastern New Mexico in Curry County, near the city of Clovis. The main entrance to Cannon AFB is located approximately seven miles west of the intersection of North Main Street and 7th Street in Clovis, NM.

It is the home of the 27th Special Operations Wing (SOW), whose primary mission is to plan and execute specialized and contingency operations using advanced aircraft, tactics and air refueling techniques to infiltrate, exfiltrate, and resupply special operations forces (SOF). Cannon AFB also provides intelligence, surveillance, reconnaissance, and close air support in support of SOF operations in addition to supporting Team Cannon Airman and their families. The wing provides combat-ready Airmen, C-130 Hercules, CV-22 Osprey, U-28 single-engine turboprop, and trains MQ-9 Reaper pilots and sensor operators. It is anticipated that the U-28 single-engine turboprop will be removed from Cannon AFB and the AT-802 will be the replacement aircraft. The 27th Wing comprises four major groups:

- The 27th Special Operations Group is one of four groups assigned to the 27th SOW. The group accomplishes global special operations tasking as an Air Force component member of the United States Special Operations Command. It conducts infiltration/exfiltration, combat support, helicopter, and tilt-rotor aerial refueling, psychological warfare and other special missions. It

directs the deployment, employment, training, and planning for seven squadrons that operate the C-130 Hercules, CV-22 Osprey, U-28, and MQ-9 Reaper.

- The 27th Special Operations Maintenance Group is composed of the 27th Special Operations Aircraft Maintenance Squadron, the 27th Special Operations Maintenance Squadron, and the 727th Special Operations Aircraft Maintenance Squadron. The group supports the aircraft of the 27th SOW through integrated maintenance support of the AFSOC mission. The 27 SOMXG maintains weapon systems, equipment, and vehicles; sustains combat readiness; manages maintenance resources; and provides maintenance services. Most importantly, they prepare, support, and execute contingency plans for worldwide mobilization, deployment, and employment of wing aircraft.

- The 27th Special Operations Mission Support Group provides base support and services activities to ensure mission readiness of the 27th Special Operations Wing, including housing, facility construction and maintenance, food service, law enforcement, fire protection, communications, personnel support, lodging, recreation, environmental management, contracting, supply, transportation, logistics plans, and other base services.

- The 27th Special Operations Medical Group provides base medical services activities to ensure mission readiness of the 27th Special Operations Wing.

The significant sources of air emissions at Cannon AFB are fuel handling (storage and dispensing), fuel combustion (boilers/heaters, emergency generators/fire pumps), painting operations (paint booths), and the use of miscellaneous chemicals.

3.2 Overview of Permitting Action

Cannon AFB is applying to renew Air Quality Operating Permit No. P119-R2. This renewal is being requested pursuant to Title 20, New Mexico Administrative Code, Chapter 2, Part 70, Section 300, Subsection B (20.2.70.300.B.2 NMAC). This renewal includes the update of process information data. For most pollutants the updates to the permit will result in modest emission decreases to the current allowable emissions table.

Cannon AFB is a not a major source for hazardous air pollutants (HAPs) under Title III of the Clean Air Act. The current Cannon AFB Title V operating permit limits allowable HAP emissions to 9.9 tons per year (tpy) of any individual HAP and 24.9 tpy of all HAPs combined. The proposed renewal application

will not affect the facility's non-major status or existing HAP limits as no changes are requested to the HAP limits of 9.9 or 24.9 tpy.

Cannon AFB is a major source, as defined in 20.2.70 NMAC – Operating Permits, and in Title V of the Federal Clean Air Act. A major source is one that has potential to emit (PTE) in excess of 100 tpy of any regulated pollutant. Cannon AFB currently has allowable emissions of nitrogen dioxide (NO_x) that exceed 100 tpy. In addition, potential VOC emissions are very near the 100 tpy threshold. Cannon AFB's allowable emission limits from the operating permit are below 250 tpy for all regulated pollutants, which is below the state and federal Prevention of Significant Deterioration (PSD) regulation threshold. In addition to Operating Permit No. P119-R2, Cannon AFB holds an NSR Permit under 20.2.72 NMAC (Permit No.1517M5 and subsequent revisions R1 through R14).

3.3 Summary of Changes from the Existing Operating Permit

The existing operating permit establishes emission limits and requirements for the various types of equipment operated at Cannon AFB. This renewal application will serve as an update to the current operating permit. In addition to equipment information, typographical, and administrative revisions, proposed changes include:

1) Addition of identical replacement boiler units in Building 4607 (EU 14007, 14008, and 14009) as reflected in the NSR technical revision 1517M5R10 issued 1/20/21.
2) Removal of EU 14001 through 14004 (8.25 and 8.628 MMBtu/hr heating units) in Building 199 and a corresponding reduction in the natural gas capacity/limit from 429.42 to 164.68 million cubic feet per year to reflect the fuel burning capacity for the remaining permitted boiler and heating units (EU 14007 through EU 14014).
3) Updates to paint products used and usage limits (gal/hr) at the paint spray booths (EU 21003, 21005, and 21006). A more detailed description of the paint products updates and changes to the internal combustion engines/generators is given below.
4) Removal of emergency generator units 19327, 19328, 19329, and 19330.
5) Inclusion of replacement emergency generators for EU Numbers 19306, 19308, 19310, 19313, 19315, 19322, 19340, and 19347.
6) Addition of new emergency generators; EU 19367 (Bldg. 4904, 755 hp), EU 19368 (Bldg. 102, 237 hp), and EU 19369 (Bldg. 3050, 39.9 hp).

7) Inclusion of four additional placeholder units (ten total EU 19370 – EU 19379) for future emergency generators and two additional placeholder units (five total EU 19021 – 19025) for fire pump engines. Note despite the addition of the future units, the overall allowable emissions for the internal combustion engines are moderately lower when compared to P119-R2. This is due to the removal of four large emergency generators (EU 19327 – 19330) and the inclusion of replacement units that have lower emission rates than the units that they replaced.
8) Removal of EU 22003 (300 gallon gasoline storage tank) and the associated fuel dispensing operation (EU 15002). The tank is no longer on Cannon AFB.
9) Change in the throughput/capacity limit for the Gasoline Distribution Plant (EU 16001). It is requested that the limit be increased from 27,810 to 65,000 gallons per year. This increase was previously approved in an NSR Administrative Amendment (1517M5R14) approved on July 20, 2022. The 65,000 gallons per year represents the maximum amount of gasoline to be loaded into cargo trucks for distribution to various Cannon AFB sites.

Surface Coating - Paint Booths

Many of the paints that were originally authorized under NSR Permit 1517M5R1 were never used or are no longer needed. Similarly, there have been changes to (additions/substitutions, and deletions) to some of the paints listed in the previous Title V permit applications for P119-R1, and P119-R2. Thus, the paint booth update being requested with this permit renewal is to include new paints (and substitute paints) that were not included in the original list of authorized materials associated with NSR Permit 1517M5R1 and were not included in the previous Title V applications, and to remove paints that are no longer needed or used. The NSR permit and Title V permit require all new paint products be evaluated and thus they have been evaluated as part of the process to add them to the updated list of authorized materials. None of the paint products used (including new paint materials) have exceeded the lb/hour screening levels for toxic air pollutants found in 20.2.72.500 NMAC, Table 1. However, for some paints, in order to stay below the toxic air pollutant screening levels found in 20.2.72.500 NMAC, it was necessary to establish gallon per hour usage limits that are more restrictive than the NSR permit maximum gallon per hour rates.

The paint products and solvents with usage limits that are more restrictive than the baseline limits established in the NSR permit shown in Table 3-1 below. The complete list of all paint/solvent materials proposed are shown in Section 6.

Table 3-1
Updated Authorized Product List with more Restricted Limits (3 gal/hr) Versus NSR Baseline for Surface Coating Operations

EU ID	Constituent Name	NSN	SDS No.[A]
21003[B]	Urethane, Clear	8010PHM00007121	202
	Hardener	8010PHM00028995	207
	Urethane Enamel, Yellow Base, Gloss	8010PHM00054435	208
	Sealant, Dent Filler, Metal Surface, Kit	8030009262135	215a,b
	Basecoat	8010PHM00324457	300
21005 & 21006[C]	Polyurethane, Black, 37038, Flat, Kit	8010012853555	3a,b
	Polyurethane, Gray, 26173, Semi-gloss, Aircraft Surfaces, Kit	8010013397015	5a,b
	Polyurethane, Orange-Yellow, 13538, Gloss	8010012659153	9a,b
	Polyurethane, Red, 11136, Gloss Kit	8010012659139	14a,b
	Epoxy Primer, Dark Green, Aircraft Surfaces Kit	8010012180858	51a,b
	Polyurethane, Gray, 36293, Flat, Aircraft, Kit	8010015053700	86a,b
	Elastomeric Coating, Rain Erosion, Kit	8010010547229	89
	Polyurethane, Gray, Semigloss, Aircraft	8010010573600	214a,b
	Epoxy, Light Green, Primer, Kit	8010012180856	216a,b
	Primer, Epoxy, Light Green, Kit	8010012187354	217a,b
	Polyurethane, Gray, 36375, Flat, Kit	8010012659151	220a,b
	Polyurethane, 36231, Flat, Kit	8010013296752	224a,b
	Polyurethane, Gray 36176, Flat, Kit	8010013536550	225a,b
	Polyurethane, Yellow,33538, Flat, Kit	8010013801744	226a,b
	Polyurethane, Gray, Flat, Kit	8010014924700	228a,b
	Polyurethane, Gray, 16473, Gloss, Kit	8010015053698	230a,b
	Polyurethane, Black, 37038, Flat, Kit	8010015053701	231a,b
	Polyurethane, Black, 37038, Flat, Kit	8010015204055	235a,b
	Polyurethane, White,17925, Gloss, Aircraft Surfaces Kit	8010015834811	238a,b
	Polyurethane, Black, 17038, Gloss, Aircraft, Kit	8010012853047	302a,b
	Epoxy, Gray, 16081, Gloss, Kit	8010014191167	304a,b
	MIL-PRF-85285E TY. IV CL. H #37038 Flat Black and Polyurethane Catalyst Kit	8010PHM00348802	314a,b
	Polyurethane. Red, 3116, Flat Kit	8010013786514	316a,b

A: SDS numbers between less than 200 represent materials on the original list of authorized material associated with the NSR permit. SDS with numbers between 200 and 299 were new on Permit P119-R2. SDS numbers 300 and greater are new for this permit renewal.
B: NSR limit 12 gallons per hour
C: NSR limit 15 gallons per hour for spray gun application, 10 gal/hr for non-spray application.

Diesel Internal Combustion Engines

Table 3-2 below summarizes the equipment changes for the internal combustion engines. All new and replacement generators are NSPS compliant.

Table 3-2
Summary of Equipment Changes – Diesel Internal Combustion Engines

EU ID	Building/Location	Horsepower Rating	Notes
New Generators			
19367	4904	755	Tier 2
19368	102	237	Tier 3
19369	3050	39.9	Tier 4
Replacement Generators			
19306	128	173	Tier 3, Replaces 519 hp NESHAP Generator
19308	158	325	Tier 3, Replaces 900 hp NESHAP Generator
19310	216	67	Tier 3, Replaces 68 hp NESHAP Generator
19313	336	36	Tier 4, Replaces 126 hp Tier 3 Generator
19315	356	69	Tier 3, Replaces 37 hp NESHAP Generator
19322	728	94	Tier 2, Replaces 201 hp NESHAP Generator
19340	2302	69	Tier 3, Replaces 34 hp NESHAP Generator
19347	3060	27	Tier 4, Replaces 20 hp NESHAP Generator
Deleted/ Removed Generators			
19327	780	1220	Identical Tier 2 Generators, all four units have not operated in 5 + years, have been decommissioned and will be removed at a future date. There are no plans to re-purpose these units/engines.
19328	780	1220	
19329	780	1220	
19330	780	1220	

In addition to these updates Cannon AFB is requesting additional placeholders for future fire pump engines (two additional, five total) and for emergency generators (four additional, ten total). Additional updates/corrections to capacities, model numbers, installation/manufacture dates, etc. are shown in UA Table 2 (Section 2).

3.4 Emission Rate Changes

The equipment updates described in the section above to have resulted in an approximate 22 percent decrease in emissions of NOx, CO, PM_{10} and $PM_{2.5}$. This is due to the removal of the four large heaters at Building 199 and changes to some of the emergency generators. Emissions for the SOx and VOC were roughly the same, see Table 3-3 below for a summary of the facility wide emission changes.

Table 3-3
Facility Emissions after Operating Permit Renewal

Facility Wide Annual Emission Rate (ton/yr)			
Pollutant	**Current**	**Proposed Emissions**	**Change in Emission**
NO_X	131.5	103.0	(28.5)
CO	72.4	57.4	(15.0)
VOC	97.6	98.4	0.8
SO_X	9.3	9.8	0.5
PM	N/A	6.1	N/A
PM_{10}	7.7	6.1	(1.6)
$PM_{2.5}$	7.3	5.7	(1.6)
HAP	24.9 combined / 9.9 individual	No change	No Change

All proposed changes including typographical edits are included in the tracked changes version of Operating Permit No. P119-R2 submitted in accordance with the guidance provided in Section 20 of the New Mexico Environment Department Air Quality Bureau's (NMED AQB) Universal Application Forms.

3.5 Startup, Shutdown, and Maintenance Emissions

Emissions from combustion sources (external and internal combustion) may be slightly lower during startup and shutdown as discussed in the NMED AQB guidance document titled Guidance for Including Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance in Permit Applications dated 29 July 2008, specifically the "Uncontrolled" sections for Engines, Turbines, and Heaters/Boilers. Emissions data is not available for estimating these startup and shutdown emissions; it is assumed that these emissions are equal to steady-state operations.

Emissions from scheduled maintenance activities were reviewed for external and internal combustion. Emissions data is not available for estimating scheduled maintenance activities; it is assumed that these emissions are equal to steady-state operation.

Cannon AFB assumes that startup, shutdown, and scheduled maintenance (SSM) emissions from the mission support equipment related to training exercises, aircraft refueling and maintenance, jet fuel storage and distribution, and corrosion control/surface coating activities are equal to steady state emissions; therefore it is assumed that the established emission limits contained in Cannon AFB's operating permit for these sources are sufficient to accommodate SSM emissions and an exceedance is not expected.

3.6 Contact for Technical Information

Technical questions regarding the application may be referred to the Air Quality Program Manger within the Civil Engineering Squadron to the attention of:

Sara Newton
Water and Air Quality Program Manager
27 SOCES/CEIE, Cannon AFB, NM
OFFICE 575-904-6735
CELL 575-915-5624

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.

Process flow sheets are shown below.

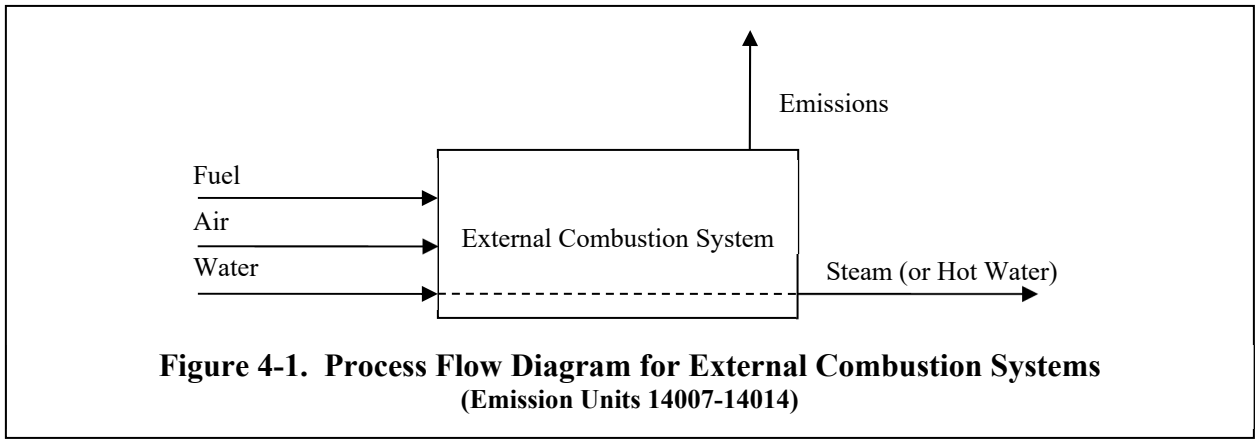


Figure 4-1. Process Flow Diagram for External Combustion Systems
(Emission Units 14007-14014)

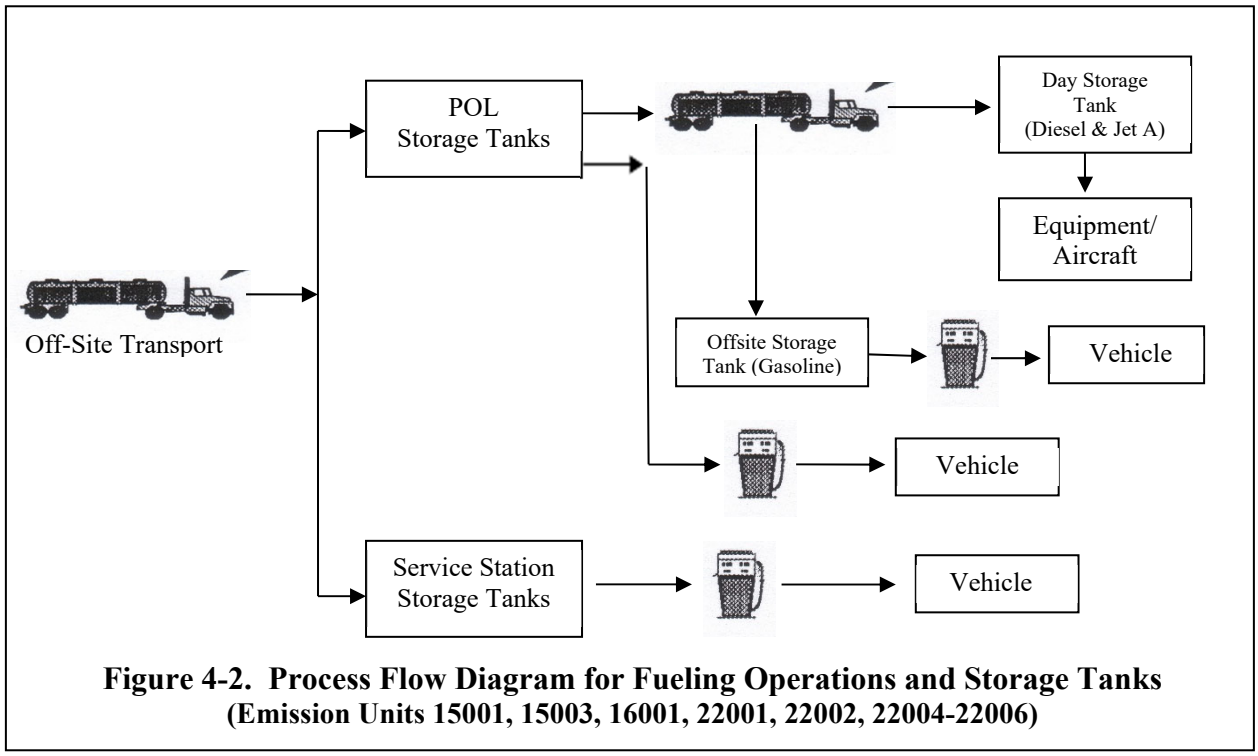


Figure 4-2. Process Flow Diagram for Fueling Operations and Storage Tanks
(Emission Units 15001, 15003, 16001, 22001, 22002, 22004-22006)

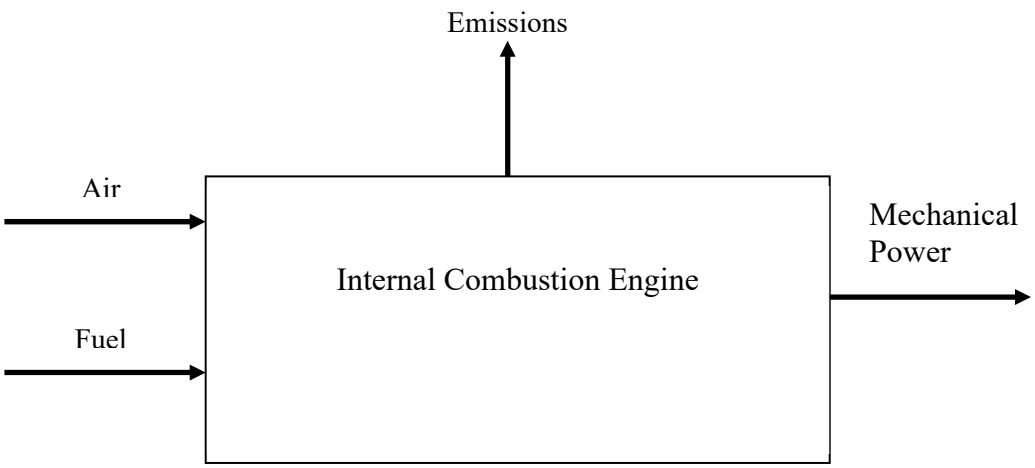


Figure 4-3. Process Flow Diagram for Internal Combustion Engines
(Emission Unit 19000s)

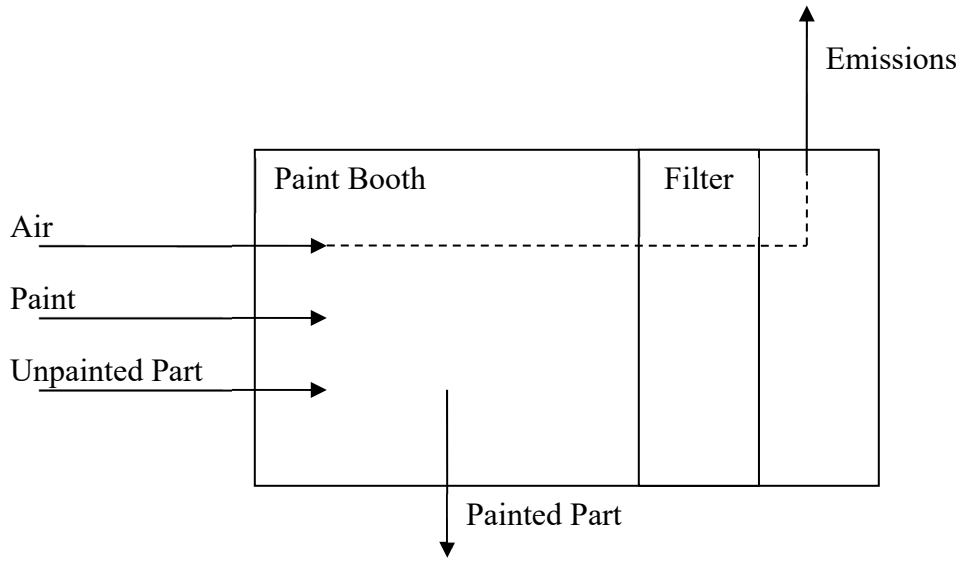


Figure 4-4. Process Flow Diagram for Surface Coating in Paint Booth
(Emission Unit 21003, 21005, and 21006)

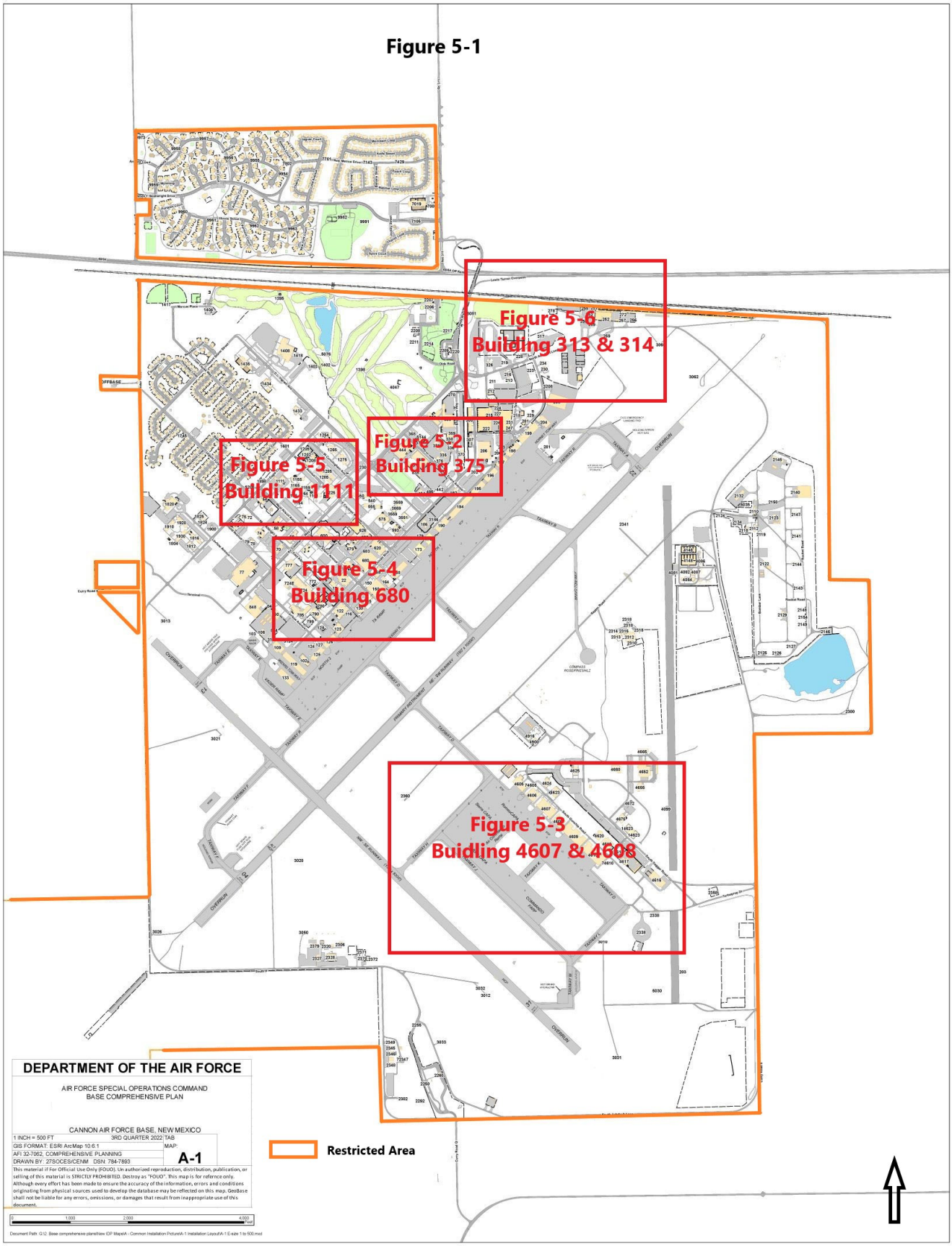
Section 5

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.

See figures 5-1 through 5-6 on the following pages.

Figure 5-1



(Scale bar above equal to 4,000 ft)

Figure 5-2

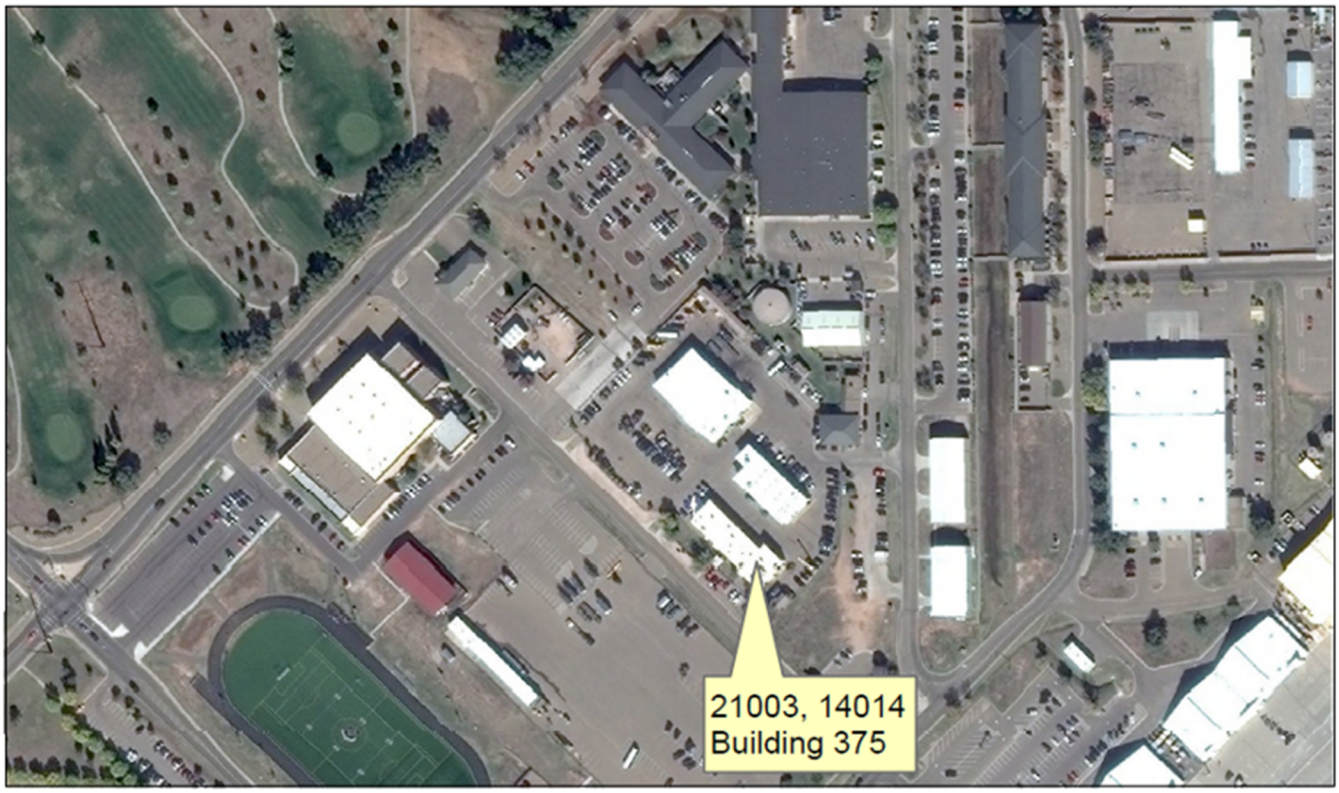


Figure 5-3

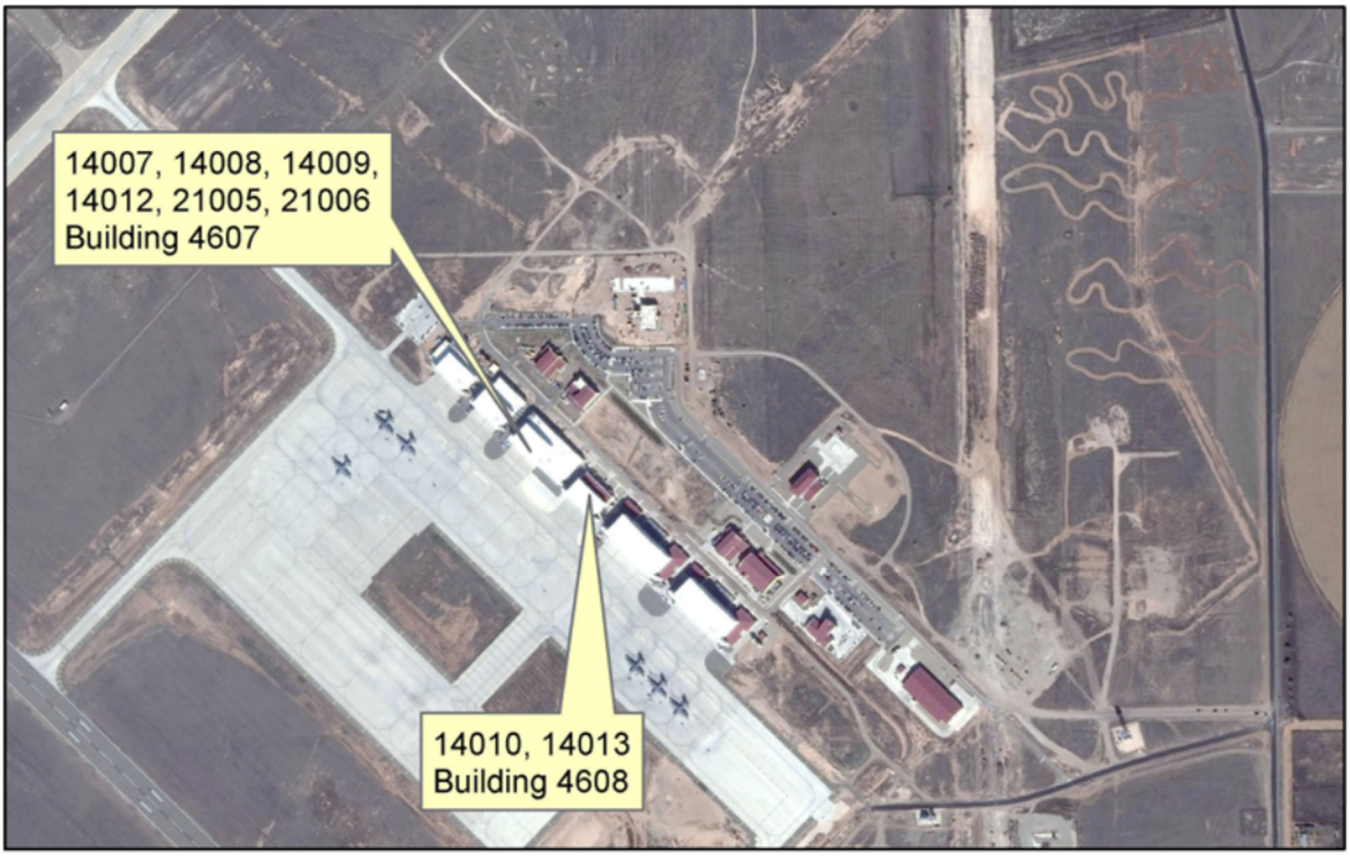


Figure **5-4**

Figure 5-5

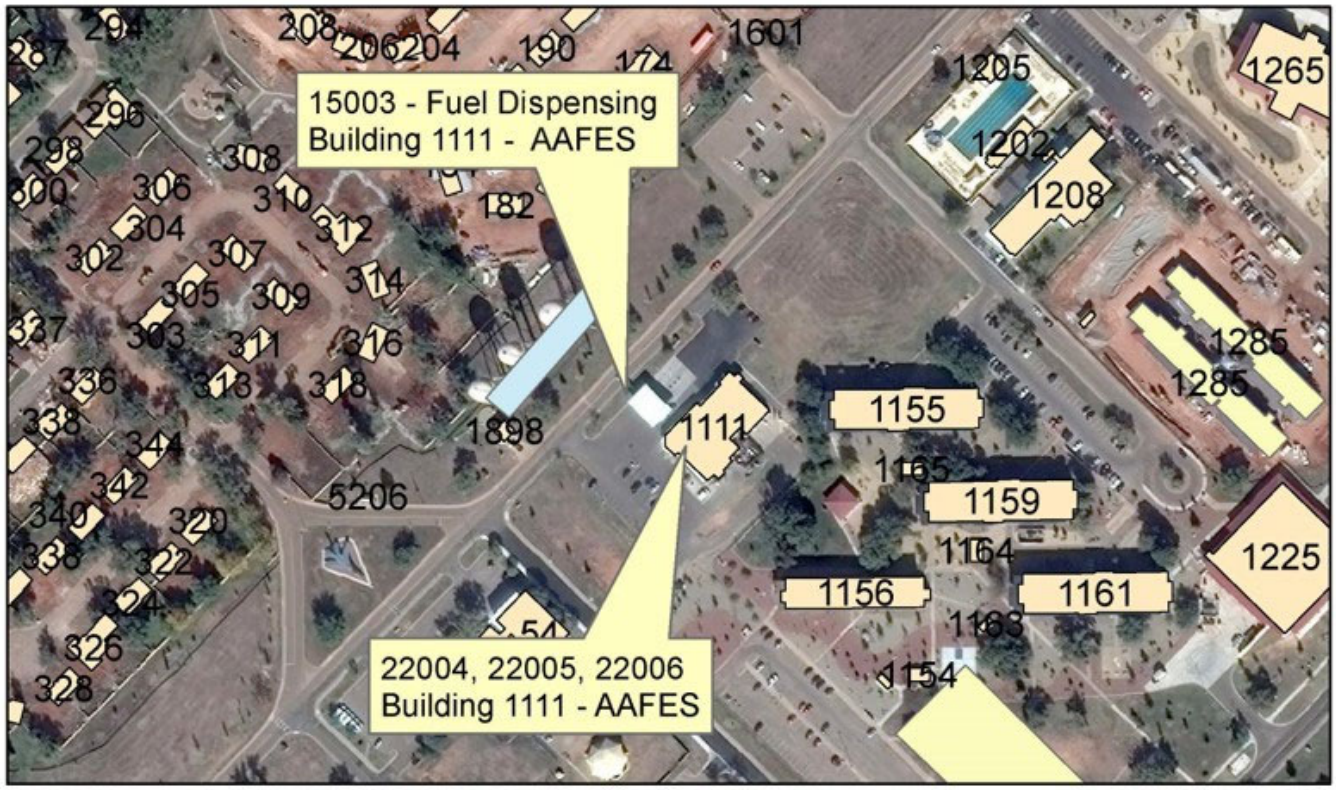
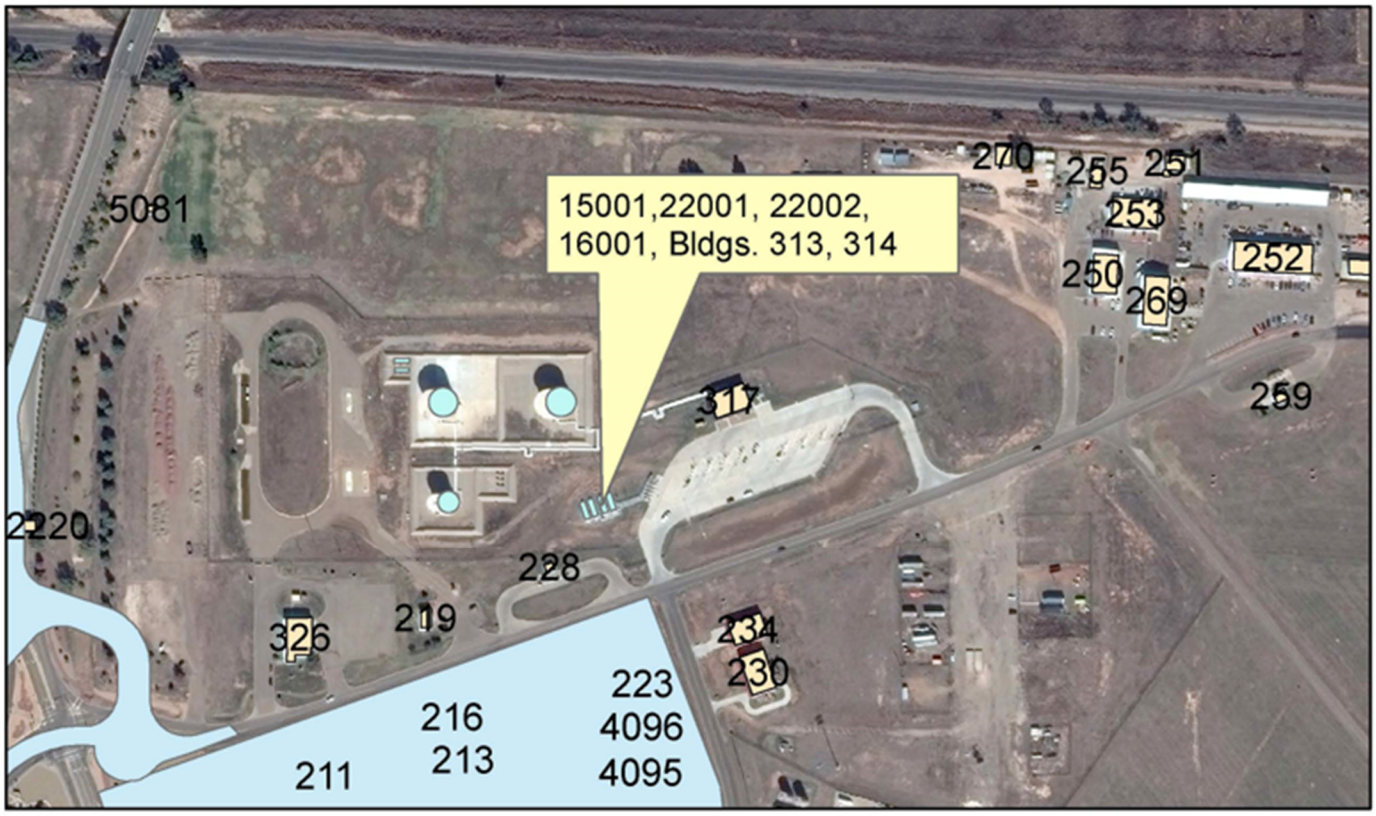


Figure 5-6


15001,22001, 22002,
16001, Bldgs. 313, 314
5081
270
255
251
253
252
250
269
317
259
2220
228
219
326
234
230
223
4096
4095
216
213
211

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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.

This section describes the emission calculation methodology for all permitted source categories at Cannon AFB. All calculations for permitted emission units are provided in the UA2 Excel spreadsheets that are also presented at the end of this Section.

6.1 External Combustion Emission Calculations

Emissions from external combustion systems include NO_x, CO, SO_2, PM, VOCs, and trace amounts of HAP.

Emissions from the seven external combustion systems included in this permit application (Emission Units 14007, 14008, 14009, 14010, 14011, 14012, 14013 and 14014), have been calculated using the algorithms and emission factors contained in AP-42 Chapter 1.4 – Natural Gas Combustion. An example of the emission calculation methodology is shown below.

Emission Calculation Methods and Information Sources. Cannon AFB has calculated allowable emissions from external combustion systems (EU Numbers 14007 through 14014) using the algorithms described in Section 1.4 (July 1998 version) of AP-42. Fuel usage for the eight nonexempt systems was calculated by multiplying the rated capacity of the units (Btu/hr) by 8,760 hours per year. By basing the allowable emissions on the maximum capacity and 8,760 hours per year, the allowable emissions will be the maximum emissions possible. Actual emissions are estimated to be less than one-quarter of the allowable emissions. The general equation for calculating emissions is:

$$\text{Emissions [tpy]} = \frac{(\text{rated capacity [Btu/hr]}) * (\text{hours [hr/yr]}) * (\text{emission factor [lb/}10^6\ \text{ft}^3\text{]})}{(\text{fuel heating value [Btu/ft}^3\text{]}) * (10^6\ [\text{ft}^3/10^6\ \text{ft}^3]) * (2000\ [\text{lb/ton}])}$$

A summary of the emissions by individual EU number and a detailed description of the emission calculation methodology are provided in the UA2 Excel workbook in the spreadsheet titled “ECOM - Emissions”.

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from external combustion systems. The units are permitted at their maximum possible emission rate; therefore, monitoring of emissions is not required to demonstrate compliance with the permit. Actual emissions are calculated and submitted to the NMED AQB semiannually.

Emissions. External combustion maximum emission rates are listed in Table 6-1. Emission for individual HAPs for this source category are not presented since these emissions are included in the existing base wide emission limits for HAP.

Table 6-1
Maximum/Allowable Emission for External Combustion Activities

Pollutant	Annual Emission Rate (ton/yr)
NO_X	8.23
CO	6.92
VOC	0.45
SO_X	0.05
PM	0.63
PM_{10}	0.63
$PM_{2.5}$	0.63
HAP	Included in Basewide Limit

6.2 Fuel Dispensing Emission Calculations

Emissions from gasoline dispensing operations occur as a result of fuel vapor displacement when the equipment/vehicle fuel tank is filled, and as a result of fuel spillage. Emissions of VOCs, including some HAPs, result from gasoline dispensing.

Emission Calculation Methods and Information Sources. Emissions from fuel dispensing have been calculated based on maximum annual fuel throughput and using the methodology described in Section 5.2 of AP-42 (June 2008 version). The following equation is used to calculate VOC emissions from fuel dispensing:

VOC [tpy] = (gasoline throughput [10^3 gal/yr]) * (11.7 [lb VOC/10^3 gal]) / (2000 [lb/ton])

The VOC emission factor (11.7 lb/gal) used in the equation above is the sum of the uncontrolled displacement loss emission factor (11.0 lb/gal) and the spillage loss emission factor (0.7 lb/gal) from AP-42 Table 5.2-7. HAP emissions for unleaded motor vehicle gasoline are calculated using the gasoline speciation factors in the *Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018,* Table 6-5.

The following equation illustrated how HAP emissions were calculated.

Gasoline speciated HAP emissions [ton/yr] = (VOC emissions [ton/yr]) * (speciated HAP vapor wt%) / 100

A summary of the emissions and a detailed description of the emission calculation methodology are provided in the UA2 spreadsheet titled “Fuel Dispensing - Emissions”.

Emission Measurement Methods/Equipment Cannon AFB does not measure emissions from fuel dispensing operations. Fuel throughput is tracked, and emissions are calculated using the methodology described above and submitted to the NMED AQB semiannually.

Emissions. The total maximum annual VOC emissions are 44.5 tons per year and are based on 7,600,424 gallons of gasoline dispensed per year. The gallons dispensed is based on the maximum throughput of the gasoline storage tanks that is stipulated in the current NSR Permit (Permit No. 1517M5R1). Calculating emissions using the maximum throughput for storage tanks represents the worst-case emissions for fuel dispensing. However, actual emissions from fuel dispensing at Cannon AFB will be much lower than the requested allowable emissions.

Source category specific allowable emission rates for HAP are not established for fuel dispensing because these emissions are included in the existing base wide emission limit for HAP.

6.3 Gasoline Fuel Storage Tank Emission Calculations

Emissions from fuel storage operations consist of VOCs, some of which are also HAPs. Emissions are caused by the displacement of fuel vapors during tank filling (working loss), and by standing (breathing) storage losses (i.e., pressure increases within the tank associated with external heating causing fuel vapors to be forced from the tank vents).

Emission Calculation Methods and Information Sources. Cannon AFB has calculated emissions for gasoline storage tanks based on the type of tank, tank capacity, and annual throughput using the EPA TANKS V4.09d modeling program. The methodology and equations used by EPA TANKS to calculate emissions is based on Section 7.1 of AP-42 - Organic Liquid Storage Tanks. The gasoline throughput entered into the TANKS Program was based on the fuel throughput stipulated in the NSR Permit (Permit No. 1517M5R1).

HAP emissions for unleaded motor vehicle gasoline are calculated using the gasoline speciation factors found in the *Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018*, Table 6-5.

One of the tanks (EU 22001) stores a blend of gasoline and ethanol (E85). Gasoline was selected as the fuel in the TANKS program to estimate worst case VOC emissions. Similarly, because there is no HAP speciation/profile available for E85 the HAP profile for gasoline was assumed.

The following equations were used in calculating emissions.

VOC emissions [ton/yr] = (working losses[lb/yr] + standing losses[lb/yr]) * (1 ton/2,000 lbs)
Gasoline speciated HAP emissions [ton/yr] = (VOC emissions [ton/yr]) * (speciated HAP vapor wt% / 100)

The detailed TANKS output for all permitted storage tanks is included in Section 7. A summary of the emissions including HAP calculations can be found in the UA2 Excel workbook in the spreadsheet titled “Tank-Emissions”.

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from gasoline storage tanks. Fuel throughput is recorded, and emissions are calculated using the methodology cited above and submitted to the NMED AQB semiannually.

Emissions. The expected maximum VOC emissions based on throughput limits established in the NSR permit is 12.19 tons per year. This reflects the removal of EU 22003 which had an NSR throughput limit of 51,000 gallons per year. Total HAP emissions are estimated to be 0.35 tons per year and are included in the established basewide permit limit for HAP emissions.

6.4 Gasoline Fuel Distribution

Emissions of VOCs and HAP from gasoline loading rack operations (EU 16001) occur as a result of fuel vapor displacement when the tanker truck is filled.

Emission Calculation Methods and Information Sources. Vapor displacement emissions from gasoline fuel distribution were estimated using the "loading loss" equation for loading petroleum liquids from AP-42, Section 5.2, Equation 1. The emission factor is dependent upon the fuel temperature, vapor pressure, molecular weight, and a saturation factor, which is dependent on the fuel loading methodology. The emission factor (E_R) is calculated using the following equation:

$$E_R = 12.46 * [(M) * (P) * (S) / (T)]$$

Where: E_R = Emissions due to vapor displacement (lb/1,000 gal fuel transferred)
M = Fuel vapor molecular weight (lb/pound moles [lb-mol])
P = True fuel vapor pressure (psia)
S = Saturation factor for fuel loading method
T = Temperature of fuel loaded, °R (degrees Fahrenheit [°F] + 460)

All of the tank trucks use a submerged loading method. The properties of the fuel (gasoline RVP 10) were taken from AP-42, Section 7, Table 7.1-2 assuming an average temperature 60 deg. F.

VOC emissions due to vapor displacement from tank truck fuel loading were calculated by multiplying the quantity of fuel transferred by the calculated emission factor (E_R) from above as follows:

$$\text{VOC emissions [ton/yr)] = } (E_R \text{ [lb VOC/10}^3 \text{ gal] * (1 ton/2,000 lbs)}$$

HAP emissions were calculated using the same methodology as described in Section 6.3.
A summary of the emissions and a detailed description of the emission calculation methodology are provided in the UA2 Excel workbook in the spreadsheet titled "Fuel Loading - Emissions".

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from fuel loading rack operations. Fuel throughput is tracked, and emissions are calculated using the methodology described above and submitted to the NMED AQB semiannually.

Emissions. The maximum VOC emissions for fuel loading were calculated to be 0.16 tpy based on 65,000 gallons of fuel loaded. Total HAP emissions are estimated to be 0.005 tons per year and are included in the established base wide permit limit for HAP emissions.

6.5 Internal Combustion Calculations

Emissions from internal combustion engines (ICE) include NO_x, CO, SO_x, PM, VOCs, GHGs, and trace amounts of HAPs.

Emission Calculation Methods and Information Sources. The emissions from engines rated less than or equal to 600 horsepower (hp) and manufactured prior to 2006 have been calculated using the emission factors from AP-42, Table 3.3-1. For diesel-fueled engines greater than 600 hp, emission factors were obtained from AP-42, Table 3.4-1.

The emissions from engines manufactured in 2006 and later have been calculated using the applicable NSPS (40 CFR Part 60 Subpart IIII) emission standards for each piece of equipment in accordance with Section A604.D of Operating Permit No. P119-R2. When an emission standard was given in the form of non-methane hydrocarbons (NMHC) + NO_x it was used to calculate emission of NO_x. In these cases, for small engines ($\leq$ 600 hp) the VOC emissions factor was assumed to be the sum of the crankcase and exhaust portion of the total organic compounds listed in AP-42, Table 3.3-1. The VOC emissions from large engines were considered to be the total organic compound (TOC) emissions minus methane (CH_4) emissions (assumed to be 9% of TOC) (Source AP-42 Table 3.4-1). Estimating emissions using this method is a conservative approach for both NO_x and VOC. Because 40 CFR 60 Subpart IIII does not contain emission standards for SO_x, the emission factor from AP-42, Tables 3.3-1 and 3.4-1 were used, as applicable.

Emissions were calculated by multiplying the appropriate emission factor (lb/hp-hr) by the engine horsepower and maximum operating hours per year. The basic emission calculation is given below:

Emissions [ton/yr] = (engine rating [hp]) * (operating time [hr/yr]) * (emission factor [lb/hp-hr]) / (2000)[lb/ton]

HAP emissions from internal combustion units are minimal; the AQB indicated in its 8 December 1995 "Implementation of EPA White Paper for 40 CFR 70 Permit Applications" letter that trace levels of HAP emissions need not be included in permit applications. Therefore, HAP emissions for internal combustion systems have not been included in the application forms.

Requested allowable emissions are based on 500 operating hours per year for each ICE unit. These hours account for the maximum number of hours an emergency engine can run. The use of 500 hours per year is considered conservative as actual operating hours historically average well under 150 hours per year for most generators. Out of the 500 operating hours, no more than 100 will be used for testing and maintenance purposes. This is consistent with what is allowed for an emergency generator under 40 CFR Part 63 Subpart ZZZZ and 40 CFR Part 60 Subpart IIII. Cannon AFB will ensure that it meets the requirements of NSPS 40 CFR 60 Subpart IIII and will not operate any generator for more than 100 hours per year for maintenance purposes.

A summary of the emissions by individual EU number and a detailed description of the emission calculation methodology are provided in the UA2 Excel workbook in the spreadsheets titled "ICOM - Emissions" and "ICOM -Methodology &EF's".

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from its internal combustion engines. Cannon AFB records the capacity and the operating hours of each engine and emissions are calculated using the methodology described above and submitted to the NMED AQB semiannually.

Emissions. Table 6-2 lists the total maximum generator emissions based upon 500 operating hours per hours per year, per generator. These emissions represent a decrease from what was allowed in the current Title V permit P119-R2.

Table 6-2
Maximum/Allowable Emissions for Internal Combustion Engines

Pollutants	Annual Emission Rate (ton/yr)
NO_X	94.81
CO	50.43
VOC	14.19
SO_X	9.75
PM	4.51
PM_{10}	4.51
$PM_{2.5}$	4.51

6.6 Miscellaneous Chemical Use Calculations

Various organizations at Cannon AFB use paints, solvents, and other chemicals for facility maintenance and mission-related purposes in both enclosed and unenclosed areas. Emissions from miscellaneous chemical use primarily consist of VOC and any associated HAPs contained in the chemical/material. Very small quantities of PM emissions may occur when aerosol paints are used. The use of paint included in this category are those operations that take place outside of permitted paint booths. Much of the individual miscellaneous paint uses is small. Typical painting activities include stenciling numbers onto equipment, painting small parts or electronic components, and maintenance painting of fixed structures like buildings, tanks, and fences. Although some of these painting activities are exempt under Item 2 (activities that occur strictly for maintenance of grounds or buildings) and Item 13 (paint or non-paint materials dispensed from prepackaged aerosol cans of 16 ounce or less capacity) on the NMED List of Trivial Activities, it is easier for Cannon AFB to capture all of these activities rather than determine in each case which uses are exempt and which are nonexempt. Other chemicals are used for a wide variety of purposes in operations throughout Cannon AFB. For example, solvents are used for surface cleaning and other chemicals are used for photographic processing and chemical analyses. Most individual chemical uses are small. Miscellaneous chemical use is conducted by almost every organization at Cannon AFB.

Emission Calculation Methods and Information Sources. Cannon AFB calculates actual emissions from miscellaneous chemical use based on data available in the Air Force hazardous materials management process database: Enterprise Environmental Safety and Occupational Health - Management Information System (EESOH-MIS). The EESOH-MIS system includes a copy of each product's SDS. Data on the

physical properties of the material (included constituent data) is extracted from the SDS to populate EESOH-MIS data fields. All VOC and HAP are assumed to be emitted at the time when the material is procured. Materials that contain VOC and HAPs that are not emitted during normal use, for example ethylene glycol as antifreeze in vehicles or greases and lubricants containing antimony compounds, are not included in miscellaneous chemical tracking for the Title V permit. The VOC emissions are calculated using the same approach that is illustrated in Section 6.7 below for surface coating. A sample calculation can be found in the UA2 Excel workbook in the spreadsheet titled "Misc. Chem - Emissions".

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from miscellaneous chemical use. Emissions are calculated using the methodology described above and submitted to the NMED AQB semiannually.

Emissions. Source category specific allowable emission rates are not established for miscellaneous chemical use. Cannon AFB has a basewide allowable emissions limit for HAPs thus emissions from miscellaneous chemical use are included within this basewide limit, no separate limit is established for this source category.

6.7 Surface Coating Emission Calculations

Emissions from surface coating operations consist of VOCs and HAPs associated with the solvents in the coatings, as well as PM from the solids content of paint overspray.

Emission Calculation Methods and Information Sources. Maximum emissions from Surface Coating are based upon the limits established in the current NSR Permit (Permit No.1517M5R1). Particulate emissions are based on the solids content of the material and are reduced by control efficiencies and the transfer efficiency. Transfer efficiencies account for the fraction of paint that is not transferred to the part being painted and is not entrained in the air, but rather falls on the floor, the walls, or some other item in the paint booth. Non-spray application methods (e.g., brush, roller, wipe) have a transfer efficiency of 100% and, therefore, do not produce any particulate matter emissions. The particulate matter size distribution and the calculated filter efficiency for PM, PM_{10}, and $PM_{2.5}$ for each paint booth is included in Section 7. VOC and volatile HAP emissions are estimated assuming all VOC and volatile HAP were released to the atmosphere.

Emissions are calculated based off the amount of paint used and the constituent breakdown of each paint, as found in its SDS. Where the SDS does not specify the solids content, two methods were used to estimate the PM content as follows:

1) Where constituent data was available that summed to 100 percent (or near 100 percent) the PM constituents were summed to obtain the PM content.
2) Where constituent data was incomplete (did not sum to 100 (or near 100 percent)) all of the material that is not VOC was conservatively assumed solids, even though this does not account for materials that are neither solids nor VOC, such as water, acetone, etc.

Since there is no VOC consumption or emissions control in surface coating operations, calculation of VOC emissions is a mass balance formula as follows:

$$\text{VOC Emissions [tpy]} = PQ * \rho * \text{VOC content [wt \%]} / (2000 \text{ [lb/ton]})$$

The following equation is used to calculate PM emissions:

$$\text{PM Emissions [tpy]} = PQ * \rho * \text{Solids content [wt \%]} * (1 - TE/100) * (1 - CE/100) / (2000 \text{ [lb/ton]})$$

where:

PQ	=	quantity of paint used [gal/yr]
ρ	=	density of coating material [lb/gal]
TE	=	transfer efficiency of the application equipment [%]
CE	=	efficiency of the control device [%]

HAP emissions are calculated by multiplying the weight percent of the HAP constituent in the paint by the paint use, as follows:

$$\text{HAP Emissions [tpy]} = PQ * \rho * (\text{HAP content [wt \%]}) / (2000 \text{ [lb/ton]})$$

As stated, the emissions for PM, PM_{10}, and $PM_{2.5}$ are adjusted based on the control efficiency of the paint booth filters and the particle size distribution specific to Cannon AFB operations. Cannon AFB is able to provide a detailed particle size distribution analysis based on the results of the particle size distribution laboratory testing. The results of the test report are shown in Table 6-3 which illustrates the particle size distribution for particulate matter from the paint spray booths.

Table 6-3
Particulate Matter Size Distribution for Tested Paints

Identifier	% $PM_{2.5}$	% PM_{10}	%PM (TSP)
Paint 1	3.14%	84.14%	100.00%
Paint 2	9.22%	91.15%	96.65%
Paint 3	8.16%	81.48%	99.44%
Paint 4	1.47%	83.76%	100.00%
Paint 5	2.21%	96.90%	100.00%
Average	4.84%	87.48%	99.22%

The "worst-case" particle size distribution, i.e. the distribution that had the highest percentage of PM_{10} and $PM_{2.5,}$ was based on Paint 2. This distribution was used to calculate emissions from the paint booths. Detailed distribution information from Paint 2 was used along with the size specific control efficiency data for the filters in each paint booth to calculate emission factors for emissions of PM_{10} and $PM_{2.5}$. In paint booths where multiple control efficiencies are provided for a range of particle sizes, the mass of each particle size range that would pass through the filter was calculated and then those masses were summed over the full range to come up with a new emission factor for PM_{10} and $PM_{2.5}$.

The emission calculations for EU 21003, 21005 and 21006 can be found in the Excel workbooks titled "A-P119-6-EU 21003_CAFB", and "A-P119-6 EU_21005-6-CAFB" respectively. A summary of the emissions can also be found in the UA2 Excel workbook in the spreadsheets titled "Surface Coating - Emissions" and "Surface Coating (Controls)".

Emission Measurement Methods/Equipment. Cannon AFB does not measure emissions from surface coating operations. Paint usage, application method, control efficiency (as applicable), and the paint constituents are recorded; emissions are calculated using the methodology described above and submitted to the NMED AQB semiannually.

Emissions. Emissions calculated for the surface coating operations are listed in Table 6-4 below.

Table 6-4
Surface Coating Operations Emissions

Emission Unit ID	Building	Maximum Emissions (ton/yr)			
		VOC	PM	PM10	PM2.5
21003	Vehicle Maintenance (Bldg. 375)	8.78	0.52	0.52	0.3
21005 & 21006	Corrosion Control (Bldg. 4607)	18.16	0.39	0.39	0.24
TOTAL		**26.94**	**0.91**	**0.91**	**0.54**

The general material use rates that are stipulated for each paint booth are based on the NSR permit as shown in Table 6-5.

Table 6-5
Hourly and Annual Material Use Limits for Surface Coating Operations

Emission Unit ID	Application Method	Material Use (gal/hr)	Material Use (gal/yr)
21003	Spray	12	2535
21005 and 21006	Spray	15	4800
	Non-Spray	10	900
	Aerosol	2	300

Toxic Air Pollutant (TAP) analysis was performed on the authorized list of paint products. This involved calculating the lb/hr emission rate for all TAPs present in the various paint products. The emission rates were compared to the TAP screening levels, found in 20.2.72.502 NMAC. Paints that contained TAP that exceeded its threshold value were given restricted usage limits to ensure compliance with 20.2.72.502 NMAC. Table 6-6 shows these restricted paints.

Table 6-6
Materials Requiring More Restrictive Usage Limits Based on TAP Analysis

Paint Booth 21005 and 21006 Usage Limits			
NSN	SDS ID	Product Description	Limit (gal/hr)
8010010573600	214a,b	POLYURETHANE, GRAY, SEMIGLOSS, AIRCRAFT	3
8010012180856	216a,b	EPOXY, LIGHT GREEN, PRIMER, KIT	3
8010012187354	217a,b	PRIMER, EPOXY, LIGHT GREEN, KIT	3
8010012659151	220a,b	POLYURETHANE, GRAY, 36375, FLAT, KIT	3
8010013296752	224a,b	POLYURETHANE, GRAY, 36231, FLAT, KIT	3
8010013536550	225a,b	POLYURETHANE, GRAY, 36176, FLAT, KIT	3
8010013801744	226a,b	POLYURETHANE, YELLOW, 33538, FLAT, KIT	3

Paint Booth 21005 and 21006 Usage Limits			
NSN	**SDS ID**	**Product Description**	**Limit (gal/hr)**
8010014924700	228a,b	POLYURETHANE, GRAY, 36176, FLAT, KIT	3
8010015053698	230a,b	POLYURETHANE, GRAY, 16473, GLOSS, KIT	3
8010015053701	231a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3
8010015204055	235a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3
8010015834811	238a,b	POLYURETHANE, WHITE, 17925, GLOSS, AIRCRAFT SURFACES, KIT	3
8010010547229	89	ELASTOMERIC COATING, RAIN EROSION, KIT	3
8010012180858	51a,b	EPOXY PRIMER, DARK GREEN, AIRCRAFT SURFACES, KIT	3
8010012659139	14a,b	POLYURETHANE, RED, 11136, GLOSS, KIT	3
8010012659153	9a,b	POLYURETHANE, ORANGE-YELLOW, 13538, GLOSS	3
8010012853555	3a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3
8010013397015	5a,b	POLYURETHANE, GRAY, 26173, SEMI-GLOSS, AIRCRAFT SURFACES, KIT	3
8010015053700	86a,b	POLYURETHANE, GRAY, 36293, FLAT, AIRCRAFT, KIT	3
8010012853047	302a,b	POLYURETHANE, BLACK, 17038, GLOSS, AIRCRAFT, KIT	3
8010014191167	304a,b	EPOXY, GRAY, 16081, GLOSS, KIT	3
8010PHM00348802	314a,b	MIL-PRF-85285E TY. IV CL. H #37038 FLAT BLACK AND POLYURETHANE CATALYST KIT	3
8010013786514	316a,b	POLYURETHANE, RED, 31136, FLAT, KIT	3

The emission calculations for surface coating operations, including the TAP analysis, have been included in a separate spreadsheet (A-P119-6-EU 21005-6_CAFB.xlsx) in this permit application. For each paint operation, there is a worksheet that lists all of the materials to be used in that operation and a worksheet that summarize the actual calculation of worst-case VOC, PM, HAP, and TAP emissions for each material category used in that operation. The worst-case emission rates for individual pollutants are artificially high since a different worst-case is used for each pollutant based on full-time use of the one material having the highest content of that pollutant.

Section 6 Emission Calculations Spreadsheets

Electronic versions submitted separately.

External Combustion Equipment Emissions Calculation

Unit:	14007	14008	14009	14010	14011	14012	14013	14014	Total
Capacity (MMBtu/hr)	5	5	5	0.31	0.525	2	0.31	1.03	(10^6 scf/yr)*
Max Fuel Use (10^6 scf/yr)*	42.9	42.9	42.9	2.7	4.5	17.2	2.7	8.8	**164.68**

*: Old fuel limit was 429.42 (106 scf/yr).
Because of the removal of EU 14001 - 14004 the requested new fuel limit has been reduced to 164.68 (10^6 scf/yr)

Emission Factors Natural Gas (lb/10^6 scf)		Pollutant	Emissions (lb/hr)								Total
			14007	14008	14009	14010	14011	14012	14013	14014	
NO_x	100	NO_x	0.490	0.490	0.490	0.030	0.051	0.196	0.030	0.101	1.880
SO_x	0.6	SO_x	0.003	0.003	0.003	0.0002	0.0003	0.001	0.0002	0.001	0.011
CO	84	CO	0.412	0.412	0.412	0.026	0.043	0.165	0.026	0.085	1.579
PM	7.6	PM	0.037	0.037	0.037	0.002	0.004	0.015	0.002	0.008	0.143
PM-10	7.6	PM-10	0.037	0.037	0.037	0.002	0.004	0.015	0.002	0.008	0.143
PM-2.5	7.6	PM-2.5	0.037	0.037	0.037	0.002	0.004	0.015	0.002	0.008	0.143
VOC	5.5	VOC	0.027	0.027	0.027	0.002	0.003	0.011	0.002	0.006	0.103
Lead	0.0005	Lead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total HAPs	1.9	Total HAPs	0.009	0.009	0.009	0.001	0.001	0.004	0.001	0.002	0.036

Pollutant	Emissions (ton/yr)								Total
	14007	14008	14009	14010	14011	14012	14013	14014	
NO_x	2.147	2.147	2.147	0.133	0.225	0.859	0.133	0.442	8.234
SO_x	0.013	0.013	0.013	0.001	0.001	0.005	0.001	0.003	0.049
CO	1.804	1.804	1.804	0.112	0.189	0.721	0.112	0.372	6.917
PM	0.163	0.163	0.163	0.010	0.017	0.065	0.010	0.034	0.626
PM-10	0.163	0.163	0.163	0.010	0.017	0.065	0.010	0.034	0.626
PM-2.5	0.163	0.163	0.163	0.010	0.017	0.065	0.010	0.034	0.626
VOC	0.118	0.118	0.118	0.007	0.012	0.047	0.007	0.024	0.453
Lead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total HAPs	0.041	0.041	0.041	0.003	0.004	0.016	0.003	0.008	0.156

Emission Calculation Method:

The following equation was used to calculate annual fuel consumption:

Maximum Annual fuel consumption (10^6 scf/yr) = Capacity (MMBtu/hr) * max hours of operation (hr/yr) / heating value of natural gas (Btu/scf)

The following equation was used to calculate hourly emissions for each pollutant:

Hourly emissions (lb/hr) = Emission Factor (lb/10^6 scf) * fuel consumption (10^6 scf/yr) / hours of operation (hr/yr)

The following equation was used to calculate annual emissions for each pollutant

Annual emissions (ton/yr) = fuel limit (MMscf/yr) * emission factor (lb/MMscf) / 2000 (lb/ton)

Notes:

1. Natural Gas Emission Factors for Small Boilers from AP-42, Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4
2. Natural gas heating value (Btu/scf) = 1,020
3. Max Annual Operation (hr/yr) = 8,760
4. Requested Fuel Limit (reflects limit in previous permit)= 429.42

Fuel Dispensing Emissions Calculation

	UOM	Motor Vehicle Gasoline	Aviation Gasoline
Amount of Fuel Dispensed	gal/yr	7,600,424	0
VOC Emissions	lb/yr	88,925	0
	lb/hr	10.2	0
	ton/yr	44.5	0.00
HAP Emissions	ton/yr	1.29	0.00

	Component	wt % in vapor	Emissions (tpy)
HAP Speciation for Motor Vehicle Gasoline	Benzene	0.618	**0.275**
	Butadiene	0.00162	**0.001**
	Cumene	0.00779	**0.003**
	Ethylbenzene	0.0467	**0.021**
	Hexane	0.557	**0.248**
	Naphthalene	negligible	**-**
	Toluene	0.705	**0.313**
	2,2,4-Trimethylpentane	0.711	**0.316**
	Xylenes (mixed isomers)	0.243	**0.108**
	Total wt % of HAPs in fuel	**2.89**	**1.285**
HAP Speciation for Aviation Gasoline	Benzene	0.16	**0.000**
	Ethyl Benzene	0.15	**0.000**
	n-Hexane	2.1	**0.000**
	Toluene	0.9	**0.000**
	Xylenes	0.38	**0.000**
	Tetraethyl Lead	1.58E-06	**0.000**
	Total wt % of HAPs in fuel	**3.71**	**0.000**

Emission Calculation Method:

Emissions [lb/yr] = Amount of Gasoline Dispensed [gal/yr] * 11.7 [lb VOC / 10^3 gal] / 1000 [gal / 10^3 gal]

Notes:

1. VOC emissions based on AP-42 Table 5.2-7 (version 06/08): Uncontrolled displacement loss (11.0 lb/ 10^3 gal) + spillage loss (0.7 lb/10^3 gal
2. HAP speciation profile for motor vehicle gasoline from "Air Emissions Guide for Air Force Stationary Sources:
   Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018
   A copy of the applicable pages from this reference are included in Section 7 of this application.
3. Maximum Amount of fuel dispensed taken from NSR Permit

Gasoline Fuel Distribution/Loading Emissions Calculation			
	UOM	**Actual**	**Potential**
Amount of Fuel Loaded	gal/yr	41,719	65,000
VOC Emissions	lb/yr	205.8	320.7
	lb/hr	0.023	0.037
	ton/yr	0.103	0.160
HAP Emissions	ton/yr	0.003	0.005

			Emissions (tpy)	
	Component	**wt % in vapor**	**Actual**	**Potential**
HAP Speciation for Motor Vehicle Gasoline	Benzene	0.618	**0.001**	**0.001**
	Butadiene	0.00162	**0.000**	**0.000003**
	Cumene	0.00779	**0.000**	**0.00001**
	Ethylbenzene	0.0467	**0.000**	**0.0001**
	Hexane	0.557	**0.001**	**0.001**
	Naphthalene	negligible	**-**	**-**
	Toluene	0.705	**0.001**	**0.001**
	2,2,4-Trimethylpentane	0.711	**0.001**	**0.001**
	Xylenes (mixed isomers)	0.243	**0.000**	**0.0004**
	Total wt % of HAPs in fuel	**2.89**	**0.003**	**0.005**

Emission Calculation Method:

Emissions [lb/yr] = Amount of Gasoline Loaded [gal/yr] * VOC EF [lb VOC / 10^3 gal] / 1000 [gal / 10^3 gal]

HAP Emissions [ton/yr] = Total of HAP Emission Factors [%] * Total VOC Emissions [ton/yr] / 100

VOC Emission Factor [lb VOC / 10^3 gal] = 12.46*S*P*M/T [AP-42, Section 5.2, Equation 1]

S = saturation factor = 0.6 [AP-42, Table 5.2-1]

P = true vapor pressure = 5.2 psia [AP-42, Table 7.1-2]

M = vapor molecular weight = 66 g/g-mol [AP-42, Table 7.1-2]

T = absolute temperature = 520 R [60 F + 460]

Notes:

1. HAP speciation profile for motor vehicle gasoline from "Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018 A copy of the applicable pages from this reference are included in Section 7 of this application.
2. Actual is the maximum issued over the past 3 years

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Internal Combustion - Emergency Generators Engine Emissions Calculation

Potential to Emit (PTE)

Emergency Generator Engines								
Unit ID	Building / Location	Year Mfg.	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
19001	RICE - Fire Pump Engine - Bldg. 127	1989	320	9.92	2.14	0.66	0.70	0.81
19002	RICE - Fire Pump Engine - Bldg. 127	1989	320	9.92	2.14	0.66	0.70	0.81
19003	RICE - Fire Pump Engine - Bldg. 127	1991	302	9.36	2.02	0.62	0.66	0.76
19004	RICE - Fire Pump Engine - Bldg. 160	2012	224	1.48	1.28	0.46	0.07	0.56
19005	RICE - Fire Pump Engine - Bldg. 179	2008	277	4.76	1.59	0.57	0.24	0.70
19006	RICE - Fire Pump Engine - Bldg. 179	2008	277	4.76	1.59	0.57	0.24	0.70
19007	RICE - Fire Pump Engine - Bldg. 200	1989	231	7.16	1.54	0.47	0.51	0.58
19008	RICE - Fire Pump Engine - Bldg. 200	1989	231	7.16	1.54	0.47	0.51	0.58
19009	RICE - Fire Pump Engine - Bldg. 233	1991	228	7.07	1.52	0.47	0.50	0.57
19010	RICE - Fire Pump Engine - Bldg. 845	2014	74	0.57	0.60	0.15	0.05	0.19
19013	RICE - Fire Pump Engine - Bldg. 3208	1994	235	7.29	1.57	0.48	0.52	0.59
19014	RICE - Fire Pump Engine - Bldg. 3208	1984	235	7.29	1.57	0.48	0.52	0.59
19015	RICE - Fire Pump Engine - Bldg. 3208	1994	235	7.29	1.57	0.48	0.52	0.59
19016	RICE - Fire Pump Engine - Bldg. 74605	2011	260	1.72	1.49	0.53	0.09	0.66
19017	RICE - Fire Pump Engine - Bldg. 74605	2010	260	1.72	1.49	0.53	0.09	0.66
19018	RICE - 74610 Fire Pump Engines	2013	350	2.31	2.01	0.72	0.12	0.88
19019	RICE - 74676 Fire Pump Engines	2015	121	0.80	0.99	0.25	0.06	0.30
19020	RICE - Fire Pump Engine - Bldg. 1434	2015	37	0.46	0.05	0.08	0.02	0.09
19021 -19025	RICE - Future Fire Pump Engines		500 (each)[6]	16.53	14.33	5.13	0.83	6.30
19301	RICE - Emergency Generator - Bldg. 10	2006	252	3.83	4.72	0.52	0.22	0.64
19302	RICE - Emergency Generator - Bldg. 12	2007	398	2.63	2.3	0.82	0.13	1.00
19303	RICE - Emergency Generator - Bldg. 77	2006	68	1.03	0.45	0.14	0.15	0.17
19304	RICE - Emergency Generator - Bldg. 116	2003	896	21.50	4.93	0.01	0.63	0.57
19305	RICE - Emergency Generator - Bldg. 123	2007	470	3.11	2.7	0.96	0.16	1.18
19306	RICE - Emergency Generator - Bldg. 128	2018	173	1.14	1.41	0.35	0.08	0.44
19307	RICE - Emergency Generator - Bldg. 135	2007	470	3.11	2.7	0.96	0.16	1.18
19308	RICE - Emergency Generator - Bldg. 158	2018	325	2.15	1.9	0.67	0.11	0.82
19310	RICE - Emergency Generator - Bldg. 216	2020	67	0.52	0.55	0.14	0.04	0.17
19311	RICE - Emergency Generator - Bldg. 281	2008	250	1.65	1.43	0.51	0.08	0.63
19312	RICE - Emergency Generator - Bldg. 317	2008	546	3.61	3.1	1.12	0.18	1.38
19313	RICE - Emergency Generator - Bldg. 336	2018	36	0.28	0.33	0.07	0.00	0.09
19314	RICE - Emergency Generator - Bldg. 337	2008	399	2.64	2.3	0.82	0.13	1.01
19315	RICE - Emergency Generator - Bldg. 356	2018	69	0.53	0.56	0.14	0.05	0.17
19316	RICE - Emergency Generator - Bldg. 575	2004	913	21.91	5.02	0.01	0.64	0.59
19317	RICE - Emergency Generator - Bldg. 600	2008	126	0.83	1.03	0.26	0.06	0.32
19318	RICE - Emergency Generator - Bldg. 620	2006	158	2.40	1.06	0.32	0.35	0.40
19319	RICE - Emergency Generator - Bldg. 622	2008	1214	12.85	6.96	0.01	0.40	0.78
19320	RICE - Emergency Generator - Bldg. 724	2009	398	2.63	2.3	0.82	0.13	1.00
19321	RICE - Emergency Generator - Bldg. 724	2012	865	9.15	4.96	0.01	0.29	0.55
19322	RICE - Emergency Generator - Bldg. 728	2017	94	0.73	0.77	0.19	0.06	0.24
19324	RICE - Emergency Generator - Bldg. 777	2011	755	7.99	4.33	0.01	0.25	0.48
19325	RICE - Emergency Generator - Bldg. 777	2011	755	7.99	4.33	0.01	0.25	0.48

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Internal Combustion - Emergency Generators Engine Emissions Calculation								
Potential to Emit (PTE)								
Emergency Generator Engines								
Unit ID	Building / Location	Year Mfg.	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
19326	RICE - Emergency Generator - Bldg. 777	2012	755	7.99	4.33	0.01	0.25	0.48
19331	RICE - Emergency Generator - Bldg. 790 (UPS)	2010	755	7.99	4.33	0.01	0.25	0.48
19332	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19333	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19334	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19335	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19338	RICE - Emergency Generator - Bldg. 2134	2008	145	0.96	1.18	0.30	0.07	0.37
19339	RICE - Emergency Generator - Bldg. 2300	2001	45	1.40	0.30	0.09	0.10	0.11
19340	RICE - Emergency Generator - Bldg. 2302	2018	69	0.53	0.56	0.14	0.05	0.17
19341	RICE - Emergency Generator - Bldg. 2358 (DASR)	2009	139	0.92	1.13	0.28	0.07	0.35
19342	RICE - Emergency Generator - Bldg. 2360	2007	145	0.96	1.18	0.30	0.07	0.37
19343	RICE - Emergency Generator - Bldg. 2373	2009	755	7.99	4.33	0.01	0.25	0.48
19344	RICE - Emergency Generator - Bldg. 3010	2005	27	0.84	0.18	0.06	0.06	0.07
19345	RICE - Emergency Generator - Bldg. 3033	2004	27	0.84	0.18	0.06	0.06	0.07
19347	RICE - Emergency Generator - Bldg. 3060	2018	27	0.21	0.24	0.06	0.00	0.07
19356	RICE - Emergency Generator - Bldg. 4085	2012	1193	12.62	6.84	0.01	0.39	0.77
19357	RICE - Emergency Generator - Bldg. 4086	2004	168	5.21	1.12	0.34	0.37	0.42
19358	RICE - Emergency Generator - Bldg. 4606	2011	145	0.96	1.18	0.30	0.07	0.37
19359	RICE - Emergency Generator - Bldg. 4607	2011	324	2.14	1.86	0.66	0.11	0.82
19360 [6]	RICE - Future Emergency Generator - Bldg. 4626	TBD >2006	500	3.31	2.9	1.03	0.17	1.26
19361	RICE - Emergency Generator - Bldg. 4734	2013	49	0.60	0.44	0.10	0.05	0.12
19362	RICE - Emergency Generator - Bldg. 5038	2008	364	2.41	2.1	0.75	0.12	0.92
19363	RICE - Emergency Generator - Bldg. 9971	2002	170	5.27	1.14	0.35	0.37	0.43
19364	RICE - Emergency Generator - Bldg. 9973	2006	252	3.83	4.72	0.52	0.22	0.64
19365	RICE - Emergency Generator - Bldg. 74618	2012	755	7.99	4.33	0.01	0.25	0.48
19366	RICE - Emergency Generator - Bldg. AOS Tower	2017	67	0.71	0.38	0.14	0.02	0.17
19367	RICE - Emergency Generator - Bldg. 4904	2018	755	7.99	4.33	0.01	0.25	0.48
19368	RICE - Emergency Generator - Bldg. 102	2019	237	1.57	1.36	0.49	0.08	0.60
19369	RICE - Emergency Generator - Bldg. 3050	2014	39.9	0.31	0.36	0.08	0.00	0.10
19370 - 19379	RICE - Future Emergency Generators	>2006 TBD	500 (each)[6]	33.07	28.7	10.25	1.65	12.60
Total emissions (lb/hr):				379.22	201.73	39.01	18.05	56.77
Total emissions (ton/yr):				94.81	50.43	9.75	4.51	14.19

	Maximum Annual Usage per Engine	UOM
Emergency Engines	500	hr/yr

Notes:

1. Maximum annual usage is based on EPA guidance for calculating PTE from stationary emergency generator engines. NMED NSR regulations state that stationary standby generators may only be operated less than 500 hours per year
2. The following color scheme was used to represent RICE NESHAP and NSPS applicability.

	Affected existing sources for 40 CFR 63 Subpart ZZZZ (pre June 12, 2006 construction date) and not subject to 40 CFR 60 Subpart IIII (pre July 11, 2005 construction date or are manufactured before April 1, 2006) Affected source for 40 CFR 63 Subpart ZZZZ, AP-42 emission factors used for all pollutants.
	Affected sources for 40 CFR 60 Subpart IIII (2007 model year and later emergency stationary CI ICE with a displacement of less thar 30 liters per cylinder that are not fire pump engines) must comply with the emission standards for new nonroad CI engines in §60.4202 for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE §60.4202 states that the emission standards are found in 40 CFR 89.112 Table 1.
	Affected sources for 40 CFR 60 Subpart IIII (2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder) must comply with the emission standards in Table 2 of Subpart IIII) §60.4201 sates that the relevant emission standards are found in §1039.101 and §1039.102 (Tier 4 Exhaust Emission Standards)
	Affected sources for 40 CFR 60 Subpart IIII (stationary emergency pre-2007 model year engines with a displacement of <10 liters per cylinder) must comply with the emission standards in Table 1 of Subpart IIII)
	Affected sources for 40 CFR 60 Subpart IIII (stationary emergency fire pump engines) must meet the emission standards in Table 4 of Subpart IIII).

3. Factors for SO_x and VOC were also used for units subject to 40 CFR 60 Subpart IIII emission standards to estimate emissions. NOx, CO, and PM emissions from units subject 40 CFR 60 Subpart IIII were estimated using the engines applicable emissior standards. Please see the Tab titled 'ICOM - Methodology and EF's", and Sections 6 and 7 of this application for more information.
4. When an emission standard was given in the form of NMHC + NO_x it was used to calculate emission of NO_x. In these cases, the VOC emissions factor was assumed to be the sum of the crankcase and exhaust portion of the Total Organic Compounds listed in AP-42, Table 3.3-1 for engines less than 600 hp.
5. HAP emissions from internal combustion engines are minimal; the AQB indicated in its 8 December 1995 "Implementation of EPA White Paper for 40 CFR 70 Permit Applications" letter that trace levels of HAP emissions need not be included in permit applications. Therefore, HAP emissions for internal combustion engines have not been calculated.
6. It is anticipated new emergency engines will be ordered and installed over the 5-year life span of this Title V Renewal. Cannon AFB has added place holders for these engines numbered emission unit 19366 through 19375 Cannon AFB has also included placeholders for an additional three fire pump engines numbering 19021 through 19023 Cannon AFB has estimated the emissions from these engines based on a conservative average power rating of 500 HP and 500 hours per year of operation per engine. These engines would all be required to meet applicable NSPS standards. Once the actual engines are ready to be installed, Cannon AFB will submit a letter to the Department detailing the actual engine specifications, location, installation date, anticipated start up date, and emissions calculations
7. For emission unit 19360 with the manufacture date of TBD it is assumed that this engine is post-2006 and since the horsepower is TBD it is assumed that it is 500 hp.

Internal Combustion - Emergency Generators Engine Emissions Calculation
Calculation Methodology and Emission Factors

The following equation was used to calculate hourly emissions for each pollutant:

Hourly emissions (lb/hr) = HP * EF (lb/hp-hr)

where: HP = horsepower
EF = Emission Factor

The following equation was used to calculate annual emissions for each pollutant:

Annual emissions (ton/yr) = Hourly emissions (lb/hr) * Annual Usage Rate (hr/yr) / 2000 (lb/ton)

Emission Factors for Diesel Industrial Engines < 600 hp AP-42 Chapter 3.3 Table 3.3-1 and Table 3.3-2		
	Emission Factors	
Pollutant	lb/hp-hr	lb/MMBtu
NO_x	0.031	4.41
CO	0.00668	0.95
SO_x	0.00205	0.29
PM_{10}	0.0022	0.31
VOC	0.00252	0.36
Total HAP	4.52E-05	6.45E-03

Emission Factors for Diesel Industrial Engines > 600 hp AP-42 Chapter 3.4 Table 3.4-1		
	Emission Factors	
Pollutant	lb/hp-hr	lb/MMBtu
NO_x	0.024	3.2
CO	0.0055	0.85
SO_x	0.000010605	0.001515
PM	0.0007	0.1
VOC	0.00064155	0.0819
Total HAP	3.05E-05	4.36E-03

Assumes a diesel sulfur content of 0.0015 weight percent.

Notes:

1. No emission factor data for Particulate Matter (PM) is included in AP-42 Table 3.3-1, assumed PM and $PM_{2.5}$ emission factors are equal to Particulate $Matter_{10}$.
2. Assume Particulate $Matter_{2.5}$ and Particulate $Matter_{10}$ equals Particulate Matter for AP-42, Table 3.4-1.
3. Volatile Organic Compounds assumed to be the sum of the crankcase and exhaust portion of Total Organic Compounds (TOC).

Table 1 to 40 CFR 89.112 (Nonroad Diesel Engine Emission Standards (g/bhp-hr)) [2007 Model year and later]							
Engine Power	Tier	Year	CO	HC	NMHC+NOx	NOx	PM
kW < 8	Tier 1	2000	6.0	-	7.8	-	0.75
(hp < 11)	Tier 2	2005	6.0	-	5.6	-	0.6
8 ≤ kW < 19	Tier 1	2000	4.9	-	7.1	-	0.6
(11 ≤ hp < 25)	Tier 2	2005	4.9	-	5.6	-	0.6
19≤ kW < 37	Tier 1	1999	4.1	-	7.1	-	0.6
(25 ≤ hp < 50)	Tier 2	2004	4.1	-	5.6	-	0.45
	Tier 1	1998	-	-	-	6.9	-
37 ≤ kW < 75	Tier 2	2004	3.7	-	5.6	-	0.3
(50 ≤ hp < 100)	Tier 3	2008	3.7	-	3.5	-	*
	Tier 1	1997	-	-	-	6.9	-
75 ≤ kW < 130	Tier 2	2003	3.7	-	4.9	-	0.22
(100 ≤ hp < 175)	Tier 3	2007	3.7	-	3.0	-	*
	Tier 1	1996	8.5	1.0	-	6.9	0.4
130 ≤ kW < 225	Tier 2	2003	2.6	-	4.9	-	0.15
(175 ≤ hp < 300)	Tier 3	2006	2.6	-	3.0	-	*
	Tier 1	1996	8.5	1.0	-	6.9	0.4
225 ≤ kW < 450	Tier 2	2001	2.6	-	4.8	-	0.15
(300 ≤ hp < 600)	Tier 3	2006	2.6	-	3.0	-	*
	Tier 1	1996	8.5	1.0	-	6.9	0.4
450 ≤ kW < 560	Tier 2	2002	2.6	-	4.8	-	0.15
(600 ≤ hp < 750)	Tier 3	2006	2.6	-	3.0	-	*
kW ≥ 560	Tier 1	2000	8.5	1.0	-	6.9	0.4
(hp ≥ 750)	Tier 2	2006	2.6	-	4.8	-	0.15

* Not adopted, engines must meet Tier 2 PM standard.

Notes:

1. Emission factor data given for Particulate Matter (PM), assumed PM emissions equal to Particulate Matter <10μm and Particulate Matter <2.5μm emissions.

Tables 1 through 3 of §1039.102 and Table 1 of §1039.101 (Tier 4 Exhaust Emission Standards) (g/HP-hr)						
Engine power	**Model year(s)**	**NO_X+ NMHC**	**CO**	**PM**	**NMHC**	**NOx**
KW<8 (HP<11)	2008+	5.6	6.0	0.30	-	-
8≤KW<19 (11≤HP<25)	2008+	5.6	4.9	0.30	-	-
19≤KW<37 (25≤HP<50)	2008-2012	5.6	4.1	0.22	-	-
19≤KW<37 (25≤HP<50)	2013+	3.5	4.1	0.022	-	-
37 ≤ KW < 56 (50 ≤ HP< 75)	2013+	3.5	3.7	0.022	-	-
56 ≤ KW <130 (75 ≤ HP< 175)	2015+	-	3.7	0.015	0.14	0.3

Table 1 to Subpart IIII of Part 60— Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007–2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in (g/HP-hr)					
Maximum engine power	**NMHC + NO_X**	**HC**	**NO_X**	**CO**	**PM**
KW<8 (HP<11)	7.8	-	-	6.0	0.75
8≤KW<19 (11≤HP<25)	7.1	-	-	4.9	0.60
19≤KW<37 (25≤HP<50)	7.1	-	-	4.1	0.60
37≤KW<56 (50≤HP<75)	-	-	6.9	-	-
56≤KW<75 (75≤HP<100)	-	-	6.9	-	-
75≤KW<130 (100≤HP<175)	-	-	6.9	-	-
130≤KW<225 (175≤HP<300)	-	1.0	6.9	8.5	0.40
225≤KW<450 (300≤HP<600)	-	1.0	6.9	8.5	0.40
450≤KW≤560 (600≤HP≤750)	-	1.0	6.9	8.5	0.40
KW>560 (HP>750)	-	1.0	6.9	8.5	0.40

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines (g/HP-hr)				
Maximum engine power	**Model year(s)**	**NMHC + NO_X**	**CO**	**PM**
KW<8 (HP<11)	2010 and earlier	7.8	6.0	0.75
	2011+	5.6	-	0.30
8≤KW<19 (11≤HP<25)	2010 and earlier	7.1	4.9	0.6
	2011+	5.6	-	0.30
19≤KW<37 (25≤HP<50)	2010 and earlier	7.1	4.1	0.60
	2011+	5.6	-	0.22
37≤KW<56 (50≤HP<75)	2010 and earlier	7.8	3.7	0.60
	2011+[1]	3.5	-	0.30
56≤KW<75 (75≤HP<100)	2010 and earlier	7.8	3.7	0.60
	2011+[1]	3.5	-	0.30
75≤KW<130 (100≤HP<175)	2009 and earlier	7.8	3.7	0.60
	2010+[2]	3.0	-	0.22
130≤KW<225 (175≤HP<300)	2008 and earlier	7.8	2.6	0.40
	2009+[3]	3.0	-	0.15
225≤KW<450 (300≤HP<600)	2008 and earlier	7.8	2.6	0.40
	2009+[3]	3.0	-	0.15
450≤KW≤560 (600≤HP≤750)	2008 and earlier	7.8	2.6	0.40
	2009+	3.0	-	0.15
KW>560 (HP>750)	2007 and earlier	7.8	2.6	0.40
	2008+	4.8	-	0.15

Miscellaneous Chemical Use Emissions Calculation

Example Calculation:

Parameters	UOM	Material 1	Material 2	Material 3	Material 4
Amount of Material Used	gal/yr	85.2	2.25	156	0.125
Density	lb/gal	6.52	10.37	8.1	6.68
PM Content	wt%	0	35	48.6	10
VOC Content	wt%	100	65	48.6	79.2
HAP Content	wt%	24	35	10.6	26.4

	UOM	Emissions (lbs/yr)				Total Emissions	
		Material 1	Material 2	Material 3	Material 4	lb/yr	tpy
PM Emissions	lb/yr	0.00	8.17	614.11	0.08	622.36	0.311
VOC Emissions	lb/yr	555.50	15.17	614.11	0.66	1185.44	0.593
HAP Emissions	lb/yr	133.32	8.17	133.94	0.22	275.65	0.138

Emission Calculation Method:

PM Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * PM Content [%] / 100
VOC Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * VOC Content [%] / 100
HAP Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * HAP Content [%] / 100

Notes:

1. Amount of Material Used is tracked from hazardous material pharmacy records using Enterprise Environmental Safety and Occupational Health-Management Information System (EESOH-MIS).
2. Density, VOC Content, HAP Content, and PM Content are obtained from Safety Data Sheets (SDS) stored in EESOH-MIS.
3. HAP Content and HAP Emissions are calculated for individual HAPs and summed to obtain value for total HAPs.
4. Example shows only four materials; in actual practice, hundreds of materials may be used each year.
5. Emission calculations are performed using the AF database system (APIMS) using the methodology described above.

Cannon AFB has a base wide permit limit for HAPs, the HAP emissions from the miscellaneous chemical use source category are included in this limit: 9.9 tpy for any individual HAP and 24.9 tpy for all HAPs combined.

Storage Tank Emission Summary

Gasoline Storage Tank Characteristics and VOC Emissions

Unit #	Location	Capacity (gal)	Type	Throughput (gal/yr)	Standing Loss (lb/yr)	Working Loss (lb/yr)	Total Emissions (lb/yr)	VOC Emissions (lb/hr)
22001	POL Yard*	12,000	HFR AST	606,462	1,911	3,431	5,341	0.61
22002	POL Yard	12,000	HFR AST	606,462	1,911	3,431	5,341	0.61
22004	AAFES	10,000	UST	3,650,000	0	6,392	6,392	0.73
22005	AAFES	10,000	UST	1,825,000	0	4,129	4,129	0.47
22006	AAFES	10,000	UST	912,500	0	3,181	3,181	0.36
					Total VOC Emissions (lb/yr)		**24,384**	**2.8**
					Total VOC Emissions (tpy)		**12.19**	
					Total HAP Emissions (tpy)		**0.35**	

* Tank contains E85 (Ethanol/gasoline blend). Assumed 100 percent gasoline to capture the worst case VOC emissions.

HFR: Horizontal Fixed Roof

AST = Aboveground Storage Tank, UST = Underground Storage Tank

VOC Emission Calculation Method:

VOC Emissions [lb/yr] = Standing Loss [lb/yr] + Working Loss [lb/yr]

VOC Emissions [lb/hr] = VOC Emissions [lb/yr] / 8760 [hrs/yr]

Standing and working loss values from EPA TANKS Program Version 4.0.9d.

TANKS Program Output shown in Section 7

Emission Unit No.	Total VOC Emissions (lb/yr)	HAP Emissions (tpy)										TOTAL HAP (tpy)
		Benzene	Cumene (Isopropyl benzene)	Ethylbenzene	Hexane	1,3-Butadiene	Naphthalene	Tetraethyl Lead	Toluene	2,2,4-Trimethylpentane	Xylenes (mixed isomers)	
22001	5,341	1.65E-02	2.08E-04	1.25E-03	1.49E-02	4.33E-05	4.11E-06	N/A	1.88E-02	1.90E-02	6.49E-03	7.72E-02
22002	5,341	1.65E-02	2.08E-04	1.25E-03	1.49E-02	4.33E-05	4.11E-06	N/A	1.88E-02	1.90E-02	6.49E-03	7.72E-02
22004	6,392	1.97E-02	2.49E-04	1.49E-03	1.78E-02	5.18E-05	4.92E-06	N/A	2.25E-02	2.27E-02	7.77E-03	9.24E-02
22005	4,129	1.28E-02	1.61E-04	9.64E-04	1.15E-02	3.34E-05	3.18E-06	N/A	1.46E-02	1.47E-02	5.02E-03	5.97E-02
22006	3,181	9.83E-03	1.24E-04	7.43E-04	8.86E-03	2.58E-05	2.45E-06	N/A	1.12E-02	1.13E-02	3.86E-03	4.60E-02
	Totals	7.53E-02	9.50E-04	5.69E-03	6.79E-02	1.98E-04	1.88E-05	N/A	8.60E-02	8.67E-02	2.96E-02	**0.35**

HAP Speciation	wt% in Gasoline Vapor
Benzene	0.618
Cumene (Isopropyl benzene)	0.00779
Ethylbenzene	0.0467
Hexane	0.557
Butadiene	0.00162
Naphthalene	0.000154
Tetraethyl Lead	-
Toluene	0.705
2,2,4-Trimethylpentane	0.711
Xylenes (mixed isomers)	0.243
Total HAP	2.89011

HAP Emission Calculation Method:

HAP Emissions [tpy] = VOC emissions [lb/yr] * (1 ton /2000 lbs) * (Total HAP [wt% in vapor] / 100)

HAP speciation profile for motor vehicle gasoline from "Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018

Assumed gasoline HAP for E-85

Surface Coating - Paint Booths Emissions Calculation

Example Calculation:

Parameters	UOM	Material 1	Material 2	Material 3	Material 4
Amount of Material Used	gal/yr	85.2	2.25	156	0.125
Density	lb/gal	6.52	10.37	8.1	6.68
VOC Content	wt%	100	25	48.6	79.2
Solid Content	wt%	0	75	51.4	20.8
HAP Content	wt%	12	32	10.6	21.5

	UOM	Emissions (lbs)				Total Emissions	
		Material 1	Material 2	Material 3	Material 4	lb/yr	tpy
VOC Emissions	lb/yr	555.50	5.83	614.11	0.66	1,176.11	0.588
PM Emissions	lb/yr	0.00	0.61	22.73	0.01	23.35	0.012
HAP Emissions	lb/yr	66.66	7.47	133.94	0.18	208.25	0.104

Emission Calculation Method:

VOC Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * VOC Content [%] / 100
PM Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * Solid Content [%] * (1 - Transfer Efficiency) * (1 - Control Efficiency) / 100
HAP Emissions [lb/yr] = Amount of Material Used [gal/yr] * Density [lb/gal] * HAP Content [%] / 100

Notes:

1. Amount of Material Used is recorded in paint booth logs.
2. Density, VOC Content, and HAP Content are obtained from Safety Data Sheets (SDS) and stored in the Air Force Enterprise Environmental Safety and Health Management Information System (EESOH-MIS).
3. When Solid Content (%) is not available it calculated as 100 - VOC Content; this gives a high value since it does not account for water or other non-VOC solvents. In some cases if the paint composition data is complete the solid components are summed to obtain the solids content.
4. Transfer efficiency spray painting is assumed to be 0.65 (65% - the default for HVLP equipment, which is used in all paint booths).
5. Control efficiency varies depending on the Equipment ID and is listed in the "Surface Coating (Controls)" Tab.
6. HAP Content and HAP Emissions are calculated for individual HAPs and summed to obtain value for total HAPs.
7. Example shows only four materials; in actual practice, hundreds of materials may be used each year.
8. No PM partitioning factors are used in this example calculation; assumed PM-2.5 = PM-10 = PM.
9. The allowable emissions were calculated in a separate paint booth spreadsheet

Paint Booth Emissions Summary

Emission Source Name and ID		Annual Usage	Uncontrolled TSP Emissions (tpy)	Uncontrolled PM_{10} emissions (tpy)	Uncontrolled $PM_{2.5}$ emissions (tpy)	Allowable TSP emissions (tpy)	Allowable PM_{10} emissions (tpy)	Allowable $PM_{2.5}$ emissions (tpy)	VOC emissions (tpy)
Paint Booth (Bldg. 375)	21003	2,535 gal/yr	4.12	3.75	0.38	0.52	0.52	0.3	8.78
Aircraft and Parts Paint Booths (Bldg. 4607)	21005	4,800 gal/yr paint/solvent; 900 gal/yr nonspray; 300 gal/yr aerosol	8.26	7.53	0.76	0.39	0.39	0.24	18.16
	21006								
					Total:	**0.91**	**0.91**	**0.54**	**26.94**

Actual paint booth emission calculations are found in separate spreadsheets ("A-P119-6-Paint 21003-CAFB.xlsx" and "A-P119-6-21005-6-CAFB.xlsx")

21003: Criteria and HAP Emissions

NSN	Material Name	SDS ID#	Hourly Limit (gal/hr)	Yearly Limit (gal/yr)	VOC, PM, and HAP Material Content (lbs/gal)											
					VOC	PM	Methanol	Toluene	Cumene	Xylene	m-Xylene	Styrene	Ethyl Benzene	Methyl Methacrylate	Isobutyl methyl ketone	Ethylene Glycol
6850PHM00064517	SOLVENT DEGREASER, WAX REMOVER	200	12	2535	6.34	-	-	0.09	-	-	-	-	-	-	-	-
8010008237910	PRIMER COATING, BLACK	201	12	2535	5.22	5.38	-	-	-	-	-	-	-	-	-	-
8010PHM00007121	URETHANE, CLEAR	202	3	2535	4.03	3.90	-	-	-	2.18	-	0.04	0.40	0.04	-	-
8010PHM00020520	PRIMER, GRAY, CORROSION RESISTANT	203	12	2535	3.41	9.28	-	-	-	-	-	-	0.06	-	0.95	-
8010PHM00020525	HARDENER	204	12	2535	2.84	5.67	-	-	-	0.64	-	-	0.09	-	-	-
8010PHM00027498	2K URETHANE CLEAR	205	12	2535	4.38	3.80	-	0.25	0.04	2.05	-	-	0.50	-	-	-
8010PHM00028972	REDUCER, PAINT, AUTOMOTIVE	206	12	2535	6.84	-	-	2.39	0.03	-	-	-	-	-	-	-
8010PHM00028995	HARDENER	207	3	2535	4.43	3.83	-	-	0.04	0.19	-	-	-	-	-	-
8010PHM00054435	URETHANE ENAMEL, YELLOW BASE, GLOSS	208	3	2535	2.55	8.13	-	-	-	-	-	-	-	0.06	-	-
8010PHM00060708	URETHANE, CLEAR, AUTOMOTIVE REFINISH	209	12	2535	4.03	3.90	-	-	-	2.18	-	0.04	0.29	0.04	-	-
8010PHM00064888	SOLVENT, MULTI-PURPOSE	210	12	2535	6.93	-	1.73	4.33	-	-	-	-	-	-	-	-
8030010849585	SEALANT, AUTOMOTIVE UNDERCOAT, BLACK, AEROSOL	211	12	2535	4.36	4.65	-	1.80	-	-	-	-	0.00	-	-	-
8040008700877	PRIMER, ADHESIVE	212	12	2535	5.31	1.82	-	-	-	1.07	-	-	0.53	-	-	-
8010002210611	LINSEED OIL, RAW	213	12	2535	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	COATING COMPOUND, NON SLIP, BLACK, 37038, AIRCRAFT WALKWAYS	214	12	2535	3.10	6.54	-	-	-	-	-	-	0.02	-	0.07	-
8030009262135	SEALANT, DENT FILLER, METAL SURFACE, KIT	215a,b	3	2535	1.67	7.85	-	-	-	-	-	-	-	-	-	-
8010PHM00324457	BASECOAT	300	3	2535	5.53	2.48	-	0.60	-	2.80	0.18	-	0.60	-	-	0.75
8010PHM00007121	URETHANE, CLEAR	301	12	2535	4.03	3.90	-	-	-	2.22	-	0.04	0.29	-	0.09	-
		Max lb/gal			6.93	9.28	1.73	4.33	0.04	2.80	0.18	0.04	0.60	0.06	0.95	0.75
		Max Hourly Emissions (lb/hr)			83.16	38.96	20.79	51.98	0.49	26.64	0.55	0.48	6.42	0.48	11.42	2.25
		Max Annual Emissions (tpy)			8.78	4.12	2.20	5.49	0.05	3.55	0.23	0.06	0.76	0.07	1.21	0.95

Transfer Efficiency (%) = **65.00**

21003: Criteria and HAP Emissions Continued

		Max Hourly Emissions (lbs/hr)											
NSN	Material Name	VOC	PM	Methanol	Toluene	Cumene	Xylene	m-Xylene	Styrene	Ethyl Benzene	Methyl Methacrylate	Isobutyl methyl ketone	Ethylene Glycol
6850PHM00064517	SOLVENT DEGREASER, WAX REMOVER	76.08	-	-	1.03	-	-	-	-	-	-	-	-
8010008237910	PRIMER COATING, BLACK	62.70	64.50	-	-	-	-	-	-	-	-	-	-
8010PHM00007121	URETHANE, CLEAR	12.08	11.71	-	-	-	6.54	-	0.13	1.19	0.13	-	-
8010PHM00020520	PRIMER, GRAY, CORROSION RESISTANT	40.96	111.32	-	-	-	-	-	-	0.76	-	11.42	-
8010PHM00020525	HARDENER	34.11	68.01	-	-	-	7.66	-	-	1.02	-	-	-
8010PHM00027498	2K URETHANE CLEAR	52.55	45.61	-	2.94	0.49	24.54	-	-	5.99	-	-	-
8010PHM00028972	REDUCER, PAINT, AUTOMOTIVE	82.08	-	-	28.73	0.41	-	-	-	-	-	-	-
8010PHM00028995	HARDENER	13.30	11.48	-	-	0.12	0.56	-	-	-	-	-	-
8010PHM00054435	URETHANE ENAMEL, YELLOW BASE, GLOSS	7.66	24.38	-	-	-	-	-	-	-	0.18	-	-
8010PHM00060708	URETHANE, CLEAR, AUTOMOTIVE REFINISH	48.33	46.83	-	-	-	26.17	-	0.48	3.43	0.48	-	-
8010PHM00064888	SOLVENT, MULTI-PURPOSE	83.16	-	20.79	51.98	-	-	-	-	-	-	-	-
8030010849585	SEALANT, AUTOMOTIVE UNDERCOAT, BLACK, AEROSOL	52.31	55.77	-	21.62	-	-	-	-	0.03	-	-	-
8040008700877	PRIMER, ADHESIVE	63.69	21.88	-	-	-	12.84	-	-	6.42	-	-	-
8010002210611	LINSEED OIL, RAW	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	COATING COMPOUND, NON SLIP, BLACK, 37038, AIRCRAFT WALKWAYS	37.17	78.52	-	-	-	-	-	-	0.23	-	0.81	-
8030009262135	SEALANT, DENT FILLER, METAL SURFACE, KIT	5.01	23.56	-	-	-	-	-	-	-	-	-	-
8010PHM00324457	BASECOAT	16.58	7.44	-		-	8.41	0.55	-	1.80	-	-	2.25
8010PHM00007121	URETHANE, CLEAR	48.32	46.84	-		-	26.64	-	0.48	3.47	-	1.12	-

21003: Criteria and HAP Emissions Continued

		Max Yearly Emissions (lbs/yr)											
NSN	Material Name	VOC	PM	Methanol	Toluene	Cumene	Xylene	m-Xylene	Styrene	Ethyl Benzene	Methyl Methacrylate	Isobutyl methyl ketone	Ethylene Glycol
6850PHM00064517	SOLVENT DEGREASER, WAX REMOVER	16,071.9	-	-	217.0	-	-	-	-	-	-	-	-
8010008237910	PRIMER COATING, BLACK	13,244.7	13,626.3	-	-	-	-	-	-	-	-	-	-
8010PHM00007121	URETHANE, CLEAR	10,208.1	9,894.5	-	-	-	5,528.2	-	110.6	1,005.1	110.6	-	-
8010PHM00020520	PRIMER, GRAY, CORROSION RESISTANT	8,653.5	23,515.6	-	-	-	-	-	-	160.8	-	2,412.7	-
8010PHM00020525	HARDENER	7,205.3	14,367.5	-	-	-	1,618.0	-	-	215.7	-	-	-
8010PHM00027498	2K URETHANE CLEAR	11,100.1	9,636.2	-	622.1	103.7	5,184.1	-	-	1,264.9	-	-	-
8010PHM00028972	REDUCER, PAINT, AUTOMOTIVE	17,339.4	-	-	6,068.8	86.7	-	-	-	-	-	-	-
8010PHM00028995	HARDENER	11,240.1	9,699.0	-	-	104.7	471.1	-	-	-	-	-	-
8010PHM00054435	URETHANE ENAMEL, YELLOW BASE, GLOSS	6,473.3	20,600.5	-	-	-	-	-	-	-	148.9	-	-
8010PHM00060708	URETHANE, CLEAR, AUTOMOTIVE REFINISH	10,210.1	9,892.5	-	-	-	5,528.2	-	100.5	723.7	100.5	-	-
8010PHM00064888	SOLVENT, MULTI-PURPOSE	17,567.6	-	4,391.9	10,979.7	-	-	-	-	-	-	-	-
8030010849585	SEALANT, AUTOMOTIVE UNDERCOAT, BLACK, AEROSOL	11,051.3	11,782.0	-	4,566.7	-	-	-	-	5.7	-	-	-
8040008700877	PRIMER, ADHESIVE	13,454.9	4,621.4	-	-	-	2,711.4	-	-	1,355.7	-	-	-
8010002210611	LINSEED OIL, RAW	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	COATING COMPOUND, NON SLIP, BLACK, 37038, AIRCRAFT WALKWAYS	7,851.9	16,588.1	-	-	-	-	-	-	48.9	-	171.1	-
8030009262135	SEALANT, DENT FILLER, METAL SURFACE, KIT	4,231.2	19,909.7	-	-	-	-	-	-	-	-	-	-
8010PHM00324457	BASECOAT	14,010.7	6,286.5	-	1,522.9	-	7,106.9	467.0	-	1,522.9	-	-	1,902.8
8010PHM00007121	URETHANE, CLEAR	10,208.1	9,894.5	-	-	-	5,628.7	-	100.5	733.7	-	236.9	-

21003: Emission Summary

Criteria Pollutant Emissions

	VOC		PM		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Worst-Case Uncontrolled Emissions (PTE)[1]	83.16	8.78	38.96	4.12	35.51	3.75	3.59	0.38
Estimated Emissions[2]	83.16	8.78	4.88	0.52	4.88	0.52	2.83	0.30

[1] See Size Distribution spreadsheet for particle size distribution of PM, PM_{10}, and $PM_{2.5}$.

[2] See Uniform Mass Distribution Spreadsheet for control efficiency data on each filter and particle size.

HAP Emissions

	HAP										
	Methanol	Toluene	Cumene	Xylene	m-Xylene	Styrene	Ethyl Benzene	Methyl Methacrylate	Isobutyl methyl ketone	Ethylene Glycol	Worst Case HAP Emissions
PTE (lb/hr)	20.79	51.98	0.49	26.64	0.55	0.48	6.42	0.48	11.42	2.25	51.98
Estimated Emissions (lb/hr)	20.79	51.98	0.49	26.64	0.55	0.48	6.42	0.48	11.42	2.25	51.98
Estimated Emissions (ton/yr)	2.196	5.490	0.052	3.553	0.234	0.055	0.761	0.074	1.206	0.951	5.49

21005/21006: Aerosol Criteria and HAP Emissions

NSN	ID#	Name	Max Hourly Usage (gal/hr)	Max Yearly Usage (gal/yr)	Material Content (lbs/gal)															
					VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010058577	204	COATING, ACRYLIC, CLEAR, AEROSOL	2	300	2.68	1.36	-	-	0.14	0.03	-	-	-	-	-	-	-	-	-	-
8010015735155	206	POLYURETHANE, GRAY, 36118, AEROSOL	2	300	5.10	1.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735157	207	POLYURETHANE, GRAY, AEROSOL	2	300	5.12	1.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735163	208	POLYURETHANE, BLACK, 37038, FLAT, AEROSOL	2	300	4.13	4.79	-	-	-	-	-	-	-	0.27	-	-	-	-	-	-
8010015737608	209	EPOXY, PRIMER, YELLOW, AEROSPACE, AEROSOL	2	300	4.70	3.67	0.25	-	0.25	-	-	-	0.04	0.25	-	-	-	-	1.05	-
8010015284840	97	POLYURETHANE, RED, 11136, GLOSS, AEROSOL	2	300	5.05	1.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284847	80	POLYURETHANE, BLACK, 17038, GLOSS, AEROSOL	2	300	5.05	1.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284848	98	POLYURETHANE, WHITE, 17925, GLOSS, AEROSOL	2	300	5.03	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284851	95	POLYURETHANE, GRAY, 36118, FLAT, AEROSOL	2	300	5.18	1.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284864	81	EPOXY PRIMER, YELLOW, FLAT, AEROSOL	2	300	4.70	3.67	-	-	0.25	-	-	-	0.04	0.25	-	-	-	-	1.05	-
8010015284866	78	POLYURETHANE, BLACK, 37038, FLAT, AEROSOL	2	300	5.15	1.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015389341	82	POLYURETHANE, GRAY, 26173, SEMIGLOSS, AEROSOL	2	300	5.14	1.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Max lb/gal		5.18	4.79	0.25	-	0.25	0.03	-	-	0.04	0.27	-	-	-	-	1.05	-
			Max Hourly Emissions (lb/hr)		10.36	5.75	0.50	-	0.50	0.05	-	-	0.08	0.54	-	-	-	-	0.75	-
			Max Yearly Emissions (tpy)		0.78	0.43	0.04	-	0.04	0.00	-	-	0.01	0.04	-	-	-	-	0.06	-

Aerosol Application Transfer Efficiency = 40 % (applies to Strontium Chromate and Barium Chromate)

21005/21006: Aerosol Criteria and HAP Emissions Continued

		Hourly Emissions (lbs/hr)															
NSN	ID#	VOC	PM Content	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010058577	204	5.36	2.71	-	-	0.29	0.05	-	-	-	-	-	-	-	-	-	-
8010015735155	206	10.20	3.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735157	207	10.24	3.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735163	208	8.26	9.58	-	-	-	-	-	-	-	0.54	-	-	-	-	-	-
8010015737608	209	9.40	7.34	0.50	-	0.50	-	-	-	0.08	0.50	-	-	-	-	1.26	-
8010015284840	97	10.10	3.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284847	80	10.09	3.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284848	98	10.06	4.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284851	95	10.36	3.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284864	81	9.40	7.34	-	-	0.50	-	-	-	0.08	0.50	-	-	-	-	1.26	-
8010015284866	78	10.30	3.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015389341	82	10.28	3.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-

21005/21006: Aerosol Criteria and HAP Emissions Continued

		Yearly Emissions (lbs/yr)															
NSN	ID#	VOC	PM Content	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010058577	204	803.3	407.1	-	-	42.9	7.6	-	-	-	-	-	-	-	-	-	-
8010015735155	206	1,530.1	539.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735157	207	1,535.5	543.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735163	208	1,239.3	1,436.7	-	-	-	-	-	-	-	80.3	-	-	-	-	-	-
8010015737608	209	1,410.7	1,100.3	75.3	-	75.3	-	-	-	12.6	75.3	-	-	-	-	188.3	-
8010015284840	97	1,514.5	495.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284847	80	1,513.8	502.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284848	98	1,509.6	599.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284851	95	1,554.4	536.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284864	81	1,410.7	1,100.3	-	-	75.3	-	-	-	12.6	75.3	-	-	-	-	188.3	-
8010015284866	78	1,544.3	522.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015389341	82	1,541.4	537.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-

21005/21006: Non Spray Criteria and HAP Emissions

					Material Content (lbs/gal)															
NSN	ID#	Name	Max Hourly Usage (gal/hr)	Max Yearly Usage (gal/yr)	VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
6810008556160	201	ISOPROPYL ALCOHOL, TECHNICAL	10	900	6.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6850014292371	202	CLEANER, GENERAL PURPOSE, AIRCRAFT EXTERIOR	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010001818079 & 8010001818080	203	THINNER, POLYURETHANE	10	900	7.42	-	0.87	-	0.49	0.09	-	-	-	-	-	-	-	-	-	-
6850013813300	6	CLEANER, SOLVENT, CITRUS, RESINS & PAINTS	10	900	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	12	COATING COMPOUND, NON SLIP, BLACK, 37038, AIRCRAFT WALKWAYS	10	900	3.60	-	-	-	0.29	0.02	-	-	-	0.07	-	-	-	-	-	-
8010PHM00054839	210	SILICONE ALKYD, HEAT RESISTANT, BLACK	10	900	5.88	-	0.54	-	0.60	0.39	-	-	-	-	-	-	-	-	-	-
6810002812762	317	METHYL ETHYL KETONE, TECHNICAL	10	900	6.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840015613126	318	DISINFECTANT, GENERAL PURPOSE (CALLA 1452)	10	900	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016004177	319	DISINFECTANT, DETERGENT, GENERAL PURPOSE, LIQUID	10	900	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016567851	320	DISINFECTANT-CALLA 1452 CONCENTRATE, GENERAL PURPOSE	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7930013670994	321	CLEANING SOLVENT,GENERAL PURPOSE	10	900	1.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Max lb/gal Rate		7.42	-	0.87	-	0.60	0.39	-	-	-	0.07	-	-	-	-	-	-
			Max Hourly Emissions (lb/h		74.23	-	8.70	-	6.04	3.88	-	-	-	0.67	-	-	-	-	-	-
			Max Yearly Emissions (tpy		3.34	-	0.39	-	0.27	0.17	-	-	-	0.03	-	-	-	-	-	-

Non Spray Application Transfer Efficiency = 100 % (applies to Strontium Chromate and Barium Chromate)

21005/21006: Non Spray Criteria and HAP Emissions Continued

		Hourly Emissions (lbs/hr)															
NSN	ID#	VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
6810008556160	201	65.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6850014292371	202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010001818079 & 8010001818080	203	74.23	-	8.70	-	4.93	0.87	-	-	-	-	-	-	-	-	-	-
6850013813300	6	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	12	36.02	-	-	-	2.88	0.19	-	-	-	0.67	-	-	-	-	-	-
8010PHM00054839	210	58.84	-	5.36	-	6.04	3.88	-	-	-	-	-	-	-	-	-	-
6810002812762	317	66.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840015613126	318	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016004177	319	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016567851	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7930013670994	321	10.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

21005/21006: Non Spray Criteria and HAP Emissions Continued

		Yearly Emissions (lbs/yr)															
NSN	ID#	VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
6810008556160	201	5,931.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6850014292371	202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010001818079 & 8010001818080	203	6,680.3	-	782.9	-	443.6	78.2	-	-	-	-	-	-	-	-	-	-
6850013813300	6	36.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	12	3,241.6	-	-	-	259.0	17.3	-	-	-	60.4	-	-	-	-	-	-
8010PHM00054839	210	5,295.2	-	482.7	-	543.7	349.1	-	-	-	-	-	-	-	-	-	-
6810002812762	317	6,004.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840015613126	318	37.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016004177	319	22.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016567851	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7930013670994	321	980.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

21005/21006: Spray Criteria and HAP Emissions

NSN	ID#	Name	Max Hourly Usage (gal/hr)	Max Yearly Usage (gal/yr)	Material Content (lbs/gal)															
					VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010573600	214a,b	POLYURETHANE, GRAY, SEMIGLOSS, AIRCRAFT	3	4800	3.43	7.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010012180856	216a,b	EPOXY, LIGHT GREEN, PRIMER, KIT	3	4800	2.81	9.15	-	-	-	-	-	-	-	-	0.05	-	-	-	0.05	2.01
8010012187354	217a,b	PRIMER, EPOXY, LIGHT GREEN, KIT	3	4800	2.81	9.11	-	-	0.05	-	-	-	-	-	0.05	-	-	-	0.05	1.90
8010012659142	219a,b	POLYURETHANE, LT GRAY, 16440, GLOSS	15	4800	3.49	6.89	-	-	0.16	0.16	-	-	-	0.15	-	-	-	-	-	-
8010012659151	220a,b	POLYURETHANE, GRAY, 36375, FLAT, KIT	3	4800	3.34	6.69	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-
8010013090328	223a,b	EPOXY PRIMER COATING, WHITE, KIT	15	4800	3.49	4.23	-	-	0.61	0.11	-	-	-	1.57	-	0.96	-	-	-	-
8010013296752	224a,b	POLYURETHANE, GRAY, 36231, FLAT, KIT	3	4800	3.31	6.48	-	-	-	0.04	-	0.01	-	-	-	-	-	-	-	-
8010013536550	225a,b	POLYURETHANE, GRAY, 36176, FLAT, KIT	3	4800	3.42	6.45	-	-	-	0.04	-	0.01	-	-	-	-	-	-	-	-
8010013801744	226a,b	POLYURETHANE, YELLOW, 33538, FLAT, KIT	3	4800	2.14	7.36	-	-	0.17	0.02	-	0.02	-	-	-	-	-	-	-	-
8010014378657	227a,b	EPOXY PRIMER COATING KIT, GREEN, DARK	15	4800	2.50	8.45	-	-	0.14	0.01	-	-	-	0.12	-	-	-	-	1.45	0.05
8010014924700	228a,b	POLYURETHANE, GRAY, 36176, FLAT, KIT	3	4800	3.42	5.70	-	-	0.27	0.10	-	0.01	-	-	-	-	-	-	-	-
8010015021836	229a,b	POLYURETHANE, BLACK, 17038, FLAT, KIT	15	4800	3.47	4.90	-	-	-	0.49	-	0.01	-	0.03	-	-	-	-	-	-
8010015053698	230a,b	POLYURETHANE, GRAY, 16473, GLOSS, KIT	3	4800	2.36	8.36	0.04	-	0.22	0.04	-	-	-	-	-	-	-	-	-	-
8010015053701	231a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3	4800	3.29	5.18	-	-	0.22	0.22	-	0.01	-	-	-	-	-	-	-	-
8010015204055	235a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3	4800	3.29	5.15	-	-	0.22	0.20	-	-	-	-	-	-	-	-	-	-
8010015249539	236a,b	POLYURETHANE COATING, BLACK, 27038, SEMIGLOSS, KIT	15	4800	2.04	6.43	-	-	0.13	-	-	0.02	-	-	-	-	-	-	-	-
8010015605376	237a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	15	4800	3.51	5.46	-	-	0.19	0.10	-	0.01	-	0.03	-	-	-	-	-	-
8010015834811	238a,b	POLYURETHANE, WHITE, 17925, GLOSS, AIRCRAFT SURFACES, KIT	3	4800	2.93	6.71	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-
8010016204042	240a,b	POLYURETHANE COATING, GRAY, 36118, AIRCRAFT SURFACES	15	4800	2.67	6.26	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-
8010010547229	89	ELASTOMERIC COATING, RAIN EROSION, KIT	3	4800	3.17	4.92	-	0.03	-	0.47	0.02	-	-	-	-	-	-	-	-	-
8010012180858	51a,b	EPOXY PRIMER, DARK GREEN, AIRCRAFT SURFACES, KIT	3	4800	2.78	9.32	-	-	-	-	-	-	-	-	0.05	-	-	-	0.05	2.47
8010012659139	14a,b	POLYURETHANE, RED, 11136, GLOSS, KIT	3	4800	3.37	5.44	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-
8010012659143	10	POLYURETHANE, WHITE, 17925, GLOSS, AIRCRAFT SURFACES, KIT	15	4800	3.33	7.15	-	-	-	-	-	-	-	0.14	-	-	-	-	-	-
8010012659153	9a,b	POLYURETHANE, ORANGE-YELLOW, 13538, GLOSS	3	4800	3.29	5.73	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-
8010012853555	3a,b	POLYURETHANE, BLACK, 37038, FLAT, KIT	3	2000	3.38	6.07	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-
8010013055555	13a,b	POLYURETHANE, GREEN, 24052, SEMI-GLOSS, KIT	15	4800	3.37	5.97	0.04	-	-	-	-	0.01	-	-	-	-	-	-	-	-
8010013397015	5a,b	POLYURETHANE, GRAY, 26173, SEMI-GLOSS, AIRCRAFT SURFACES, KIT	3	4800	3.39	5.92	-	-	-	-	-	0.02	-	0.31	-	-	-	-	-	-
8010013536551	16a,b	POLYURETHANE, GRAY, 36251, FLAT, KIT	15	4800	3.07	6.50	-	-	-	0.03	-	0.02	-	-	-	-	-	-	-	-
8010014166557	2a,b	EPOXY PRIMER, YELLOW, FLAT, AIRCRAFT SURFACES, KIT	15	4800	2.75	8.45	-	-	-	-	-	-	-	0.15	0.01	-	-	-	1.90	0.05
8010014924701	92	POLYURETHANE, GRAY, 36118, AIRCRAFT SURFACES, FLAT, KIT	15	4800	3.40	5.61	-	-	-	0.28	-	0.01	-	-	-	-	-	-	-	-
8010015053700	86a,b	POLYURETHANE, GRAY, 36293, FLAT, AIRCRAFT, KIT	3	4800	3.40	5.70	-	-	-	0.52	-	0.01	-	-	-	-	-	-	-	-
6850014089236	300a,b	COATING, CHEMICAL, BLACK, FLAT, KIT	15	4800	5.85	2.16	0.52	-	0.26	0.06	-	-	-	-	-	-	-	-	-	-
8010004591756	301a,b	POLYURETHANE, BLACK, RAIN EROSION RESISTANT, GLOSS, AIRCRAFT SURFACES, KIT	15	4800	4.21	5.88	-	-	0.22	0.07	-	0.01	-	-	-	-	-	-	-	-
8010012853047	302a,b	POLYURETHANE, BLACK, 17038, GLOSS, AIRCRAFT, KIT	3	4800	3.43	5.05	-	-	-	-	-	-	-	-	0.04	-	-	-	-	-
8010014191150	303a,b	EPOXY COATING, GRAY, 36231, FLAT, KIT	15	4800	2.37	8.26	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014191167	304a,b	EPOXY, GRAY, 16081, GLOSS, KIT	3	4800	2.42	6.44	0.25	-	-	0.05	-	-	-	0.05	-	-	-	-	-	-
8010014828620	305a,b	EPOXY PRIMER, GRAY, KIT	15	4800	2.63	8.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834363	306a,b	EPOXY PRIMER, RED, KIT	15	4800	2.74	8.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834365	307a,b	EPOXY PRIMER, GRAY, KIT	15	4800	2.63	8.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015553381	308a,b	EPOXY PRIMER COATING, GREEN, KIT	15	4800	3.06	6.52	-	-	-	-	-	-	0.19	0.07	-	-	-	-	-	-
8010015589453	309a,b	POLYURETHANE COATING, 36118, GRAY, FLAT, AIRCRAFT SURFACES, KIT	15	4800	3.51	5.56	-	-	-	-	-	-	-	0.27	-	-	-	-	-	-
8010015589457	310a,b	POLYURETHANE, GRAY, 36173, AIRCRAFT, KIT	15	4800	3.51	5.61	-	-	-	-	-	-	-	0.27	-	-	-	-	-	-
8010016107328	311a,b	EPOXY PRIMER COATING KIT	15	4800	3.47	6.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015053698R	313a,b	POLYURETHANE, GRAY, 16473, GLOSS, KIT	15	4800	2.55	7.51	0.03	-	0.12	0.03	-	0.02	-	-	-	-	-	-	-	-
8010PHM00348802	314a,b	MIL-PRF-85285E TY. IV CL. H #37038 FLAT BLACK AND POLYURETHANE CATALYST KIT	3	4800	2.84	6.60	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-
8010013786514	316a,b	POLYURETHANE, RED, 31136, FLAT, KIT	3	4800	3.05	6.49	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-
			Max lb/gal Rate		5.85	9.32	0.52	0.03	0.61	0.52	0.02	0.02	0.19	1.57	0.05	0.96	-	-	1.90	2.47
			Max Hourly Emissions (lb/hr)		87.75	45.44	7.80	0.09	9.21	7.42	0.05	0.37	2.84	23.55	0.17	14.38	-	-	10.00	2.60
			Max Yearly Emissions (tpy)		14.04	7.83	1.25	0.08	1.47	1.25	0.04	0.06	0.45	3.77	0.13	2.30	-	-	1.60	2.08

HVLP Application Transfer Efficiency = 65 % (applies to Strontium Chromate and Barium Chromate)

21005/21006: Spray Criteria and HAP Emissions Continued

		Hourly Emissions (lbs/hr)															
NSN	ID#	VOC	Particulate Matter	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010573600	214a,b	10.30	22.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010012180856	216a,b	8.42	27.46	-	-	-	-	-	-	-	-	0.16	-	-	-	0.06	2.11
8010012187354	217a,b	8.42	27.33	-	-	0.16	-	-	-	-	-	0.16	-	-	-	0.05	2.00
8010012659142	219a,b	52.33	103.39	-	-	2.41	2.41	-	-	-	2.27	-	-	-	-	-	-
8010012659151	220a,b	10.03	20.08	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-
8010013090328	223a,b	52.37	63.43	-	-	9.21	1.62	-	-	-	23.55	-	14.38	-	-	-	-
8010013296752	224a,b	9.93	19.43	-	-	-	0.12	-	0.03	-	-	-	-	-	-	-	-
8010013536550	225a,b	10.25	19.36	-	-	-	0.12	-	0.03	-	-	-	-	-	-	-	-
8010013801744	226a,b	6.42	22.07	-	-	0.51	0.07	-	0.07	-	-	-	-	-	-	-	-
8010014378657	227a,b	37.46	126.71	-	-	2.06	0.15	-	-	-	1.81	-	-	-	-	7.59	0.25
8010014924700	228a,b	10.26	17.10	-	-	0.80	0.31	-	0.03	-	-	-	-	-	-	-	-
8010015021836	229a,b	52.04	73.45	-	-	-	7.42	-	0.18	-	0.49	-	-	-	-	-	-
8010015053698	230a,b	7.07	25.08	0.13	-	0.65	0.13	-	-	-	-	-	-	-	-	-	-
8010015053701	231a,b	9.87	15.55	-	-	0.65	0.65	-	0.04	-	-	-	-	-	-	-	-
8010015204055	235a,b	9.87	15.45	-	-	0.65	0.59	-	-	-	-	-	-	-	-	-	-
8010015249539	236a,b	30.66	96.52	-	-	1.89	-	-	0.35	-	-	-	-	-	-	-	-
8010015605376	237a,b	52.64	81.88	-	-	2.91	1.51	-	0.17	-	0.50	-	-	-	-	-	-
8010015834811	238a,b	8.79	20.13	-	-	0.87	-	-	-	-	-	-	-	-	-	-	-
8010016204042	239a,b	40.12	93.90	-	-	4.34	-	-	-	-	-	-	-	-	-	-	-
8010010547229	89	9.51	14.75	-	0.09	-	1.42	0.05	-	-	-	-	-	-	-	-	-
8010012180858	51a,b	8.35	27.96	-	-	-	-	-	-	-	-	0.15	-	-	-	0.05	2.60
8010012659139	14a,b	10.11	16.33	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-
8010012659143	10	50.01	107.20	-	-	-	-	-	-	-	2.11	-	-	-	-	-	-
8010012659153	9a,b	9.86	17.20	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-
8010012853555	3a,b	10.14	18.20	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-
8010013055555	13a,b	50.57	89.50	0.53	-	-	-	-	0.17	-	-	-	-	-	-	-	-
8010013397015	5a,b	10.16	17.76	-	-	-	-	-	0.06	-	0.92	-	-	-	-	-	-
8010013536551	16a,b	46.07	97.45	-	-	-	0.43	-	0.37	-	-	-	-	-	-	-	-
8010014166557	2a,b	41.22	126.78	-	-	-	-	-	-	-	2.20	0.17	-	-	-	10.00	0.28
8010014924701	92	50.98	84.09	-	-	-	4.27	-	0.17	-	-	-	-	-	-	-	-
8010015053700	86	10.21	17.09	-	-	-	1.56	-	0.03	-	-	-	-	-	-	-	-
6850014089236	300a,b	87.75	32.35	7.80	-	3.90	0.94	-	-	-	-	-	-	-	-	-	-
8010004591756	301a,b	63.14	88.23	-	-	3.32	0.99	-	0.17	-	-	-	-	-	-	-	-
8010012853047	302a,b	10.29	15.15	-	-	-	-	-	-	-	-	0.13	-	-	-	-	-
8010014191150	303a,b	35.50	123.91	3.89	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014191167	304a,b	7.27	19.32	0.74	-	-	0.14	-	-	-	0.14	-	-	-	-	-	-
8010014828620	305a,b	39.40	129.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834363	306a,b	41.09	124.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834365	307a,b	39.40	129.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015553381	308a,b	45.94	97.79	-	-	-	-	-	-	2.84	1.12	-	-	-	-	-	-
8010015589453	309a,b	52.61	83.35	-	-	-	-	-	-	-	4.08	-	-	-	-	-	-
8010015589457	310a,b	52.61	84.13	-	-	-	-	-	-	-	4.10	-	-	-	-	-	-
8010016107328	311a,b	51.98	98.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015053698R	313a,b	38.19	112.67	0.42	-	1.80	0.42	-	0.37	-	-	-	-	-	-	-	-
8010PHM00348802	314a,b	8.52	19.80	-	-	0.87	-	-	-	-	-	-	-	-	-	-	-
8010013786514	316a,b	9.15	19.46	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-

21005/21006: Spray Criteria and HAP Emissions Continued

		Yearly Emissions (lbs/yr)															
NSN	ID#	VOC	Solids	Toluene	Toluene-2,4-diisocyanate	Xylene	Ethylbenzene	P-Phenylenediamine	Hexamethylene-di-isocyanate	Formaldehyde	Methyl Isobutyl Ketone	Cumene	Propylene Glycol Methyl Ether	Tripropylene Glycol Methyl Ether	Methanol	Strontium Chromate	Barium Chromate
8010010573600	214a,b	16,476.4	36,323.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010012180856	216a,b	13,479.5	43,939.9	-	-	-	-	-	-	-	-	252.8	-	-	-	88.5	3,378.9
8010012187354	217a,b	13,479.5	43,720.0	-	-	251.3	-	-	-	-	-	251.3	-	-	-	87.9	3,197.9
8010012659142	219a,b	16,744.2	33,084.7	-	-	771.0	771.0	-	-	-	725.2	-	-	-	-	-	-
8010012659151	220a,b	16,043.2	32,128.2	-	-	-	-	-	54.1	-	-	-	-	-	-	-	-
8010013090328	223a,b	16,758.7	20,297.0	-	-	2,947.7	517.4	-	-	-	7,537.5	-	4,601.3	-	-	-	-
8010013296752	224a,b	15,893.0	31,082.8	-	-	-	189.4	-	54.1	-	-	-	-	-	-	-	-
8010013536550	225a,b	16,403.7	30,976.9	-	-	-	186.3	-	54.1	-	-	-	-	-	-	-	-
8010013801744	226a,b	10,272.0	35,304.0	-	-	808.9	115.6	-	112.3	-	-	-	-	-	-	-	-
8010014378657	227a,b	11,987.3	40,545.9	-	-	658.4	48.1	-	-	-	578.3	-	-	-	-	2,428.7	81.0
8010014924700	228a,b	16,423.7	27,366.9	-	-	1,272.3	495.7	-	53.6	-	-	-	-	-	-	-	-
8010015021836	229a,b	16,654.1	23,503.6	-	-	-	2,375.6	-	56.1	-	158.4	-	-	-	-	-	-
8010015053698	230a,b	11,316.4	40,123.6	201.2	-	1,046.4	201.2	-	-	-	-	-	-	-	-	-	-
8010015053701	231a,b	15,792.8	24,877.8	-	-	1,036.8	1,036.8	-	61.7	-	-	-	-	-	-	-	-
8010015204055	235a,b	15,792.8	24,722.3	-	-	1,036.8	950.4	-	-	-	-	-	-	-	-	-	-
8010015249539	236a,b	9,810.0	30,887.4	-	-	606.2	-	-	112.3	-	-	-	-	-	-	-	-
8010015605376	237a,b	16,844.3	26,202.6	-	-	932.3	482.2	-	54.6	-	160.7	-	-	-	-	-	-
8010015834811	238a,b	14,060.3	32,211.7	-	-	1,389.6	-	-	-	-	-	-	-	-	-	-	-
8010016204042	239a,b	12,838.6	30,049.4	-	-	1,389.6	-	-	-	-	-	-	-	-	-	-	-
8010010547229	89	15,212.0	23,596.0	-	151.9	-	2,278.8	80.0	-	-	-	-	-	-	-	-	-
8010012180858	51a,b	13,359.3	44,739.7	-	-	-	-	-	-	-	-	232.9	-	-	-	81.5	4,157.6
8010012659139	14a,b	16,183.4	26,124.6	-	-	-	-	-	-	-	-	97.2	-	-	-	-	-
8010012659143	10	16,003.1	34,304.2	-	-	-	-	-	-	-	675.3	-	-	-	-	-	-
8010012659153	9a,b	15,782.8	27,520.6	-	-	-	-	-	-	-	-	97.2	-	-	-	-	-
8010012853555	3a,b	6,759.8	12,131.0	-	-	-	-	-	22.5	-	-	-	-	-	-	-	-
8010013055555	13a,b	16,183.4	28,640.3	169.7	-	-	-	-	54.6	-	-	-	-	-	-	-	-
8010013397015	5a,b	16,263.5	28,421.8	-	-	-	-	-	96.1	-	1,467.2	-	-	-	-	-	-
8010013536551	16a,b	14,741.3	31,185.3	-	-	-	138.9	-	118.9	-	-	-	-	-	-	-	-
8010014166557	2a,b	13,189.1	40,570.1	-	-	-	-	-	-	-	703.1	52.9	-	-	-	3,199.0	90.2
8010014924701	92	16,313.6	26,908.4	-	-	-	1,365.1	-	54.6	-	-	-	-	-	-	-	-
8010015053700	86	16,333.6	27,341.4	-	-	-	2,500.2	-	53.6	-	-	-	-	-	-	-	-
6850014089236	300a,b	28,080.6	10,352.4	2,494.8	-	1,247.4	299.4	-	-	-	-	-	-	-	-	-	-
8010004591756	301a,b	20,206.4	28,232.4	-	-	1,060.8	318.3	-	53.0	-	-	-	-	-	-	-	-
8010012853047	302a,b	16,463.8	24,242.6	-	-	-	-	-	-	-	-	200.4	-	-	-	-	-
8010014191150	303a,b	11,359.7	39,650.7	1,245.7	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014191167	304a,b	11,626.8	30,911.8	1,180.4	-	-	216.4	-	-	-	216.4	-	-	-	-	-	-
8010014828620	305a,b	12,608.2	41,547.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834363	306a,b	13,149.0	39,987.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834365	307a,b	12,608.2	41,499.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015553381	308a,b	14,701.2	31,292.7	-	-	-	-	-	-	908.7	356.9	-	-	-	-	-	-
8010015589453	309a,b	16,834.3	26,671.7	-	-	-	-	-	-	-	1,305.0	-	-	-	-	-	-
8010015589457	310a,b	16,834.3	26,922.3	-	-	-	-	-	-	-	1,312.6	-	-	-	-	-	-
8010016107328	311a,b	16,632.0	31,368.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015053698R	313a,b	12,219.7	36,053.2	134.2	-	576.9	134.2	-	117.9	-	-	-	-	-	-	-	-
8010PHM00348802	314a,b	13,639.7	31,672.3	-	-	1,389.6	-	-	-	-	-	-	-	-	-	-	-
8010013786514	316a,b	14,641.2	31,133.1	-	-	-	-	-	108.1	-	-	-	-	-	-	-	-

21005/21006: TAP Analysis

NSN	ID#	Max Hourly Usage (gal/hr)	Max Yearly Usage (gal/yr)	Hourly Emissions (lbs/hr)															
				N-Butyl Acetate	VM&P Naphtha	N-Butyl Alcohol	2-Butoxyethanol	1,2,4-Trimethylbenzene	Nitroethane	Methyl Acetate	Methyl n-Amyl Ketone	Carbon Black	Methyl Propyl Ketone	Acetic Acid	Cyclohexanone	Hexyl Acetate	Tert-Butyl Acetate	Isopropyl Alcohol	Cyclohexylamine	Diisobutyl Ketone
8010010058577	204	2	300	2.569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015735155	206	2	300	0.863	-	-	-	-	-	-	0.242	-	0.863	0.863	0.242	0.242	-	-	-	-
8010015735157	207	2	300	0.416	-	-	-	-	-	-	0.416	-	0.416	0.416	0.416	0.416	-	-	-	-
8010015735163	208	2	300	0.535	0.535	-	-	-	-	-	1.338	-	2.230	1.338	0.535	0.535	-	-	-	-
8010015737608	209	2	300	0.502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010015284840	97	2	300	0.402	-	-	-	-	-	-	1.005	-	-	-	-	-	-	-	-	-
8010015284847	80	2	300	0.403	-	-	-	-	-	-	1.008	-	-	-	-	-	-	-	-	-
8010015284848	98	2	300	0.422	-	-	-	-	-	-	1.055	-	-	-	-	-	-	-	-	-
8010015284851	95	2	300	0.871	-	-	-	-	-	-	0.244	-	-	-	-	-	-	-	-	-
8010015284864	81	2	300	0.502	-	-	-	-	-	-	0.502	-	-	-	-	-	-	-	-	-
8010015284866	78	2	300	0.413	-	-	-	-	-	-	0.413	-	-	0.413	-	-	-	-	-	-
8010015389341	82	2	300	0.416	-	-	-	-	-	-	0.416	-	-	0.416	0.416	-	-	-	-	-
Aerosol Maximum				2.569	0.535	-	-	-	-	-	1.338	-	2.230	1.338	0.535	0.535	-	-	-	-
6810008556160	201	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6850014292371	202	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010001818079 & 8010001818080	203	10	900	5.567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6850013813300	6	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010006410427	12	10	900	7.193	2.877	-	-	-	-	-	7.193	-	2.877	-	-	-	-	-	-	-
8010PHM00054839	210	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6810002812762	317	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840015613126	318	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016004177	319	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6840016567851	320	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7930013670994	321	10	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non Spray Maximum				7.193	2.877	-	-	-	-	-	7.193	-	2.877	-	-	-	-	-	-	-
8010010573600	214a,b	3	4800	6.443	-	-	-	-	-	-	3.291	0.002	-	-	-	-	-	-	-	-
8010012180856	216a,b	3	4800	-	2.586	-	4.454	1.149	0.603	-	-	-	-	-	-	-	-	-	-	-
8010012187354	217a,b	3	4800	-	2.141	-	5.711	0.857	1.440	-	-	-	-	-	-	-	-	-	-	-
8010012659142	219a,b	15	4800	4.676	1.784	-	-	0.773	-	-	-	0.017	28.044	-	-	-	-	-	-	-
8010012659151	220a,b	3	4800	1.991	0.203	-	-	0.034	-	-	3.578	0.004	-	-	-	-	-	-	-	-
8010013090328	223a,b	15	4800	-	-	3.855	-	-	-	-	-	-	-	-	-	-	4.624	-	-	-
8010013296752	224a,b	3	4800	1.978	0.203	-	-	0.047	-	-	3.551	0.002	-	-	-	-	-	-	-	-
8010013536550	225a,b	3	4800	2.253	0.203	-	-	0.095	-	-	3.493	0.004	-	-	-	-	-	-	-	-
8010013801744	226a,b	3	4800	1.053	-	-	-	-	-	2.167	3.611	-	-	-	-	-	-	-	-	-
8010014378657	227a,b	15	4800	1.807	-	-	-	-	-	-	10.842	-	19.516	-	-	-	-	-	-	-
8010014924700	228a,b	3	4800	-	-	-	-	-	-	-	5.651	0.002	-	-	-	-	-	-	-	-
8010015021836	229a,b	15	4800	7.288	1.052	-	-	0.701	-	-	7.424	0.127	6.137	-	-	-	-	-	-	-
8010015053698	230a,b	3	4800	1.052	-	-	-	-	-	-	3.773	0.004	-	-	-	-	-	-	-	-
8010015053701	231a,b	3	4800	-	-	-	-	-	-	-	4.530	0.011	-	-	-	-	-	-	-	-
8010015204055	235a,b	3	4800	-	-	-	-	-	-	-	6.568	0.009	-	-	-	-	-	-	-	-

21005/21006: TAP Analysis

NSN	ID#	Max Hourly Usage (gal/hr)	Max Yearly Usage (gal/yr)	Hourly Emissions (lbs/hr)																
				N-Butyl Acetate	VM&P Naphtha	N-Butyl Alcohol	2-Butoxyethanol	1,2,4-Trimethylbenzene	Nitroethane	Methyl Acetate	Methyl n-Amyl Ketone	Carbon Black	Methyl Propyl Ketone	Acetic Acid	Cyclohexanone	Hexyl Acetate	Tert-Butyl Acetate	Isopropyl Alcohol	Cyclohexylamine	Diisobutyl Ketone
8010015249539	236a,b	15	4800	5.265	-	-	-	-	-	22.103	9.473	0.032	-	-	-	-	-	-	-	-
8010015605376	237a,b	15	4800	1.024	1.024	-	-	0.273	-	-	13.610	0.052	0.753	-	-	-	-	-	-	-
8010015834811	238a,b	3	4800	4.429	-	-	-	-	-	-	6.503	-	-	-	-	-	-	-	-	-
8010016204042	240a,b	15	4800	31.228	-	-	-	-	-	-	13.322	-	-	-	-	-	-	-	-	-
8010010547229	89	3	4800	3.323	-	-	-	-	-	-	4.080	0.010	-	-	-	-	-	-	-	-
8010012180858	51a,b	3	4800	-	2.184	-	4.076	0.873	0.908	-	-	-	-	-	-	-	-	-	-	-
8010012659139	14a,b	3	4800	1.416	0.911	-	-	0.365	-	-	4.194	-	-	-	-	-	-	-	-	-
8010012659143	10	15	4800	4.732	0.841	-	-	-	-	-	2.930	-	18.623	-	-	-	-	-	-	-
8010012659153	9a,b	3	4800	1.463	0.911	-	-	0.365	-	-	4.213	-	-	-	-	-	-	-	-	-
8010012853555	3a,b	3	4800	0.878	0.203	-	-	0.095	-	-	7.883	0.004	-	-	-	-	-	-	-	-
8010013055555	13a,b	15	4800	1.024	0.512	-	-	0.546	-	-	9.667	0.018	-	-	-	-	-	-	-	-
8010013397015	5a,b	3	4800	1.590	-	-	-	-	-	-	4.697	0.003	-	-	-	-	-	-	-	-
8010013536551	16a,b	15	4800	11.342	3.717	-	-	0.811	-	-	15.386	0.170	-	-	-	-	-	-	-	-
8010014166557	2a,b	15	4800	1.392	3.004	2.253	-	1.502	-	-	12.450	-	19.774	-	-	-	-	-	-	-
8010014924701	92	15	4800	-	-	-	-	-	-	-	14.040	0.019	-	-	-	-	-	-	-	-
8010015053700	86	3	4800	-	-	-	-	-	-	3.125	6.640	0.004	-	-	-	-	-	-	-	-
6850014089236	300a,b	15	4800	23.888	-	-	-	-	-	-	-	0.088	-	-	9.214	-	-	18.191	-	-
8010004591756	301a,b	15	4800	23.181	-	1.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010012853047	302a,b	3	4800	1.715	0.939	-	-	0.376	-	-	4.427	0.007	-	-	-	-	-	-	-	-
8010014191150	303a,b	15	4800	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-	-	2.230	-
8010014191167	304a,b	3	4800	-	-	-	-	-	-	-	1.230	0.053	0.516	-	-	-	-	-	0.446	-
8010014828620	305a,b	15	4800	31.134	-	-	-	-	-	-	-	0.012	-	-	-	-	-	-	-	-
8010014834363	306a,b	15	4800	37.187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8010014834365	307a,b	15	4800	38.022	-	-	-	-	-	-	-	0.013	-	-	-	-	-	-	-	-
8010015553381	308a,b	15	4800	-	-	-	-	-	-	-	1.199	-	7.773	-	-	-	-	-	-	-
8010015589453	309a,b	15	4800	3.071	0.512	-	-	-	-	-	3.071	0.009	18.670	-	3.071	3.071	-	-	-	-
8010015589457	310a,b	15	4800	3.095	0.516	-	-	-	-	-	7.737	0.009	18.769	-	3.095	-	-	-	-	-
8010016107328	311a,b	15	4800	2.696	-	-	-	-	-	13.478	11.718	-	-	-	-	-	-	-	-	6.739
8010015053698R	313a,b	15	4800	-	-	-	-	-	-	-	14.922	0.014	-	-	-	-	-	-	-	-
8010PHM00348802	314a,b	3	4800	4.845	-	-	-	-	-	-	3.767	0.001	-	-	-	-	-	-	-	-
8010013786514	316a,b	3	4800	1.542	0.405	-	-	0.189	-	-	4.394	-	-	-	-	-	-	-	-	-
Spray Maximum				38.02	3.72	3.86	5.71	1.50	1.44	22.10	15.39	0.17	28.04	-	9.21	3.07	4.62	18.19	2.23	6.74
		NMED TAP Limit		47.30	90.00	10.00	8.00	8.33	20.70	40.70	15.70	0.233	46.70	1.67	70.00	20.00	63.30	65.30	2.67	16.70
		Max Hourly Emission (lb/hr)		38.02	3.72	3.86	5.71	1.50	1.44	22.10	15.39	0.17	28.04	1.34	9.21	3.07	4.62	18.19	2.23	6.74
		Over Limit?		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

HVLP Application Transfer Efficiency =	**65**	% (applies to Solids and PM pollutants)
Aerosol Application Transfer Efficiency =	**40**	% (applies to Solids and PM pollutants)
Non-Spray Application Transfer Efficiency =	**100**	% (applies to Solids and PM pollutants)
Control Efficiency =	**95.1**	% (applies to Solids and PM pollutants)

21005/21006: Emissions Summary

Criteria Pollutant Emissions

	VOC		PM		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Worst-Case Uncontrolled Emissions (PTE)[1]	172.34	18.16	51.19	8.26	46.66	7.53	4.72	0.76
Estimated Emissions[2]	172.34	18.16	2.44	0.39	2.44	0.39	1.51	0.24

HAP	PTE (lb/hr)	Estimated Emissions (lb/hr)	Estimated Emissions (tons/yr)
Toluene	17.00	17.00	1.68
Toluene-2,4-diisocyanate	0.09	0.09	0.08
Xylene	15.76	15.76	1.78
Ethylbenzene	11.35	11.35	1.43
P-Phenylenediamine	0.05	0.05	0.04
Hexamethylene-di-isocyanate	0.37	0.37	0.06
Formaldehyde	2.92	2.92	0.46
Methyl Isobutyl Ketone	24.76	24.76	3.84
Cumene	0.17	0.17	0.13
Propylene Glycol Methyl Ether	14.38	14.38	2.30
Tripropylene Glycol Methyl Ether	0.00	0.00	0.00
Methanol	0.00	0.00	0.00
Strontium Chromate	10.75	0.51	0.19
Barium Chromate	2.60	0.12	0.10
Total HAP	100.20	87.49	12.08
Worse Case HAP Emission	24.76	66.89	8.70

Notes:
It is assumed that 70% of the total painting will be done in 21005 and 30% will be done in 21006

Unit Number 21003 Uniform Mass Distribution

Uniform Mass Distribution for Paint 2

upper end of size range	relative mass of single particle in group	% of uncontrolled TSP mass	CE	controlled emission as % of uncontrolled TSP
0.3	0.001	3.82E-10	0.0%	3.82E-10
0.4	0.00237037	1.12E-07	2.9%	1.08E-07
0.55	0.006162037	2.38E-04	5.1%	2.26E-04
0.7	0.012703704	4.00E-02	8.2%	3.68E-02
1.0	0.037037037	1.88E-01	15.5%	0.1587
1.3	0.08137037	1.79E+00	27.9%	1.2940
1.6	0.151703704	1.79E+00	39.3%	1.0894
2.2	0.39437037	7.20	53.4%	3.3538
3.0	1	5.1887	74.4%	1.3283
4.0	0.186588921	13.7063	86.6%	1.8366
5.5	0.485058309	16.2757	91.9%	1.3183
7.0	1	15.7992	94.1%	0.9321
10.0	1	30.9584	96.2%	1.1764
total	4.358364823	92.94273089		12.5247

overall collection efficiency:	87.48
PM2.5 EF (% of uncontrolled TSP):	7.2612
PM10 EF (% of uncontrolled TSP):	12.5247

Unit 21005 Uniform Mass Distribution

Uniform Mass Distribution for Paint 2

upper end of size range	relative mass of single particle in group	% of uncontrolled TSP mass	CE	controlled emission as % of uncontrolled TSP
0.59		2.38E-04	94.5%	0.0000
0.87		2.28E-01	97.7%	0.0052
2.1		4.92E+00	99.3%	0.0345
6.0		5.50E+01	99.3%	0.3853
10.0		3.10E+01	99.3%	0.2167
total	0	91.15		0.6417
			overall collection efficiency:	99.36
			PM2.5 EF (% of uncontrolled TSP):	0.4250
			PM10 EF (% of uncontrolled TSP):	0.6417

Unit 21006 Uniform Mass Distribution

Uniform Mass Distribution for Paint 2

upper end of size range	relative mass of single particle in group	% of uncontrolled TSP mass	CE	controlled emission as % of uncontrolled TSP
2.5	1	9.2198	4.2%	8.8326
5.0	1	35.1706	84.5%	5.4515
10.0	1	46.7576	99.8%	0.0935
total	3	91.15		14.3776

overall collection efficiency:	85.62
PM2.5 EF (% of uncontrolled TSP):	8.8326
PM10 EF (% of uncontrolled TSP):	14.3776

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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)

6.a.1 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions at Cannon AFB are primarily due to combustion of fossil fuel. The combustion of fuel results in emissions of carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4). The activities at Cannon AFB result in the combustion of two primary fuel types: natural gas, and diesel. There are also a limited number of very small heating units that use propane. Emissions are calculated using the methodology described below and submitted to the NMED AQB annually as required by 20.2.73.300 NMAC.

Emission Calculation Methods and Information Sources. Cannon AFB has calculated the CO_2 equivalent (CO_2e) emissions and the mass GHG emissions for CO_2, N_2O, and CH_4 using the methodology described in 40 CFR 98 Subparts A and C. 40 CFR 98 Subpart C guidelines for quantifying general stationary combustion fuel source emissions follow a tiered approach. For Cannon AFB, the Tier 1 methodology, based on default high heating values (HHV) and default emission factors was utilized. The equations used are shown below:

CO_2 Mass Emissions Rate = (volume of fuel combusted) * (default HHV of the fuel) * (fuel-specific default CO_2 emission factor) * (conversion factor from kg to metric tons)

CH_4 or N_2O Mass Emissions Rate[A] = (volume of fuel combusted) * (default HHV of the fuel) * (fuel specific default CH_4 or N_2O emission factor) * (conversion factor from kg to metric tons) * $(GWP)^B$

A: Expressed as CO_2e
B: GWP= Global warming potential for each GHG from Table A-1 of 40 CFR 98 Subpart A

The emission factors relevant to the fuels used are shown in Table 6a-1 below. Global warming potential are shown in Table 6a-2.

Table 6a-1
General Stationary Fuel Combustion Source Emission Factors

Fuel Type	Default HHV (MMBtu/scf)	CO_2 Emission Factor (kg/MMBtu)	CH_4 Emission Factor (kg/MMBtu)	N_2O Emission Factor (kg/MMBtu)
Natural Gas	0.001026	53.06	0.0010	0.0001
Distillate Fuel Oil #2	0.138	73.96	0.0030	0.0006

Source: Tables C-1 and C-2 of 40 CFR Part 98 Subpart C
Conversion factor (kilograms to short tons) = 1.10231 X 10^{-3} (from Table A-2 of 40 CFR 98 Subpart A)

Table 6a-2
Global Warming Potentials

GHG	GWP
CO_2	1
CH_4	25
N_2O	298

Source: Table A-1 of 40 CFR 98 Subpart A

The emission calculations are provided in the UA2 Excel workbook in the spreadsheet titled "GHG-Emission". As shown in the referenced spreadsheet the total GHG potential emissions (CO2e) for Cannon AFB permitted sources are calculated to be 19,407 tons per year. This is roughly a 47 percent reduction from what was reported in the previous 2017 permit renewal and demonstrates that Cannon AFB remains a minor source for greenhouse gases (GHGs). A large portion of this reduction is due to the removal of the four large heaters at building 199. When the natural gas limit reflected in the NSR permit (453.3×10^6 scf/yr) is considered potential CO2e emissions are approximately 34,200 tons per year. Actual GHG emissions (not shown in this application) are below the GHG Mandatory Reporting Rule threshold of 25,000 tons per year.

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Greenhouse Gas (GHG) Emissions Calculations

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr		
		GWPs [B]	1	298	25				
Natural Gas Combustion Units	Emission Factor (kg/MMBtu)		53.06	0.0001	0.001			1.026E-03	MM Btu/scf
14007	42,941,176	mass GHG	2,576.9	0.00486	0.04857	2,576.9			
	scf/yr	CO_2e	2,576.9	1.44724	1.21413		2,579.5		
14008	42,941,176	mass GHG	2,576.9	0.00486	0.04857	2,576.9			
	scf/yr	CO_2e	2,576.9	1.44724	1.21413		2,579.5		
14009	42,941,176	mass GHG	2,576.9	0.00486	0.04857	2,576.9			
	scf/yr	CO_2e	2,576.9	1.44724	1.21413		2,579.5		
14010	2,662,353	mass GHG	159.8	0.00030	0.00301	159.8			
	scf/yr	CO_2e	159.8	0.08973	0.07528		159.9		
14011	4,508,824	mass GHG	270.6	0.00051	0.00510	270.6			
	scf/yr	CO_2e	270.6	0.15196	0.12748		270.9		
14012	17,176,471	mass GHG	1,030.7	0.00194	0.01943	1,030.8			
	scf/yr	CO_2e	1,030.7	0.57890	0.48565		1,031.8		
14013	2,662,353	mass GHG	159.8	0.00030	0.00301	159.8			
	scf/yr	CO_2e	159.8	0.08973	0.07528		159.9		
14014	8,845,882	mass GHG	530.8	0.00100	0.01000	530.8			
	scf/yr	CO_2e	530.8	0.29813	0.25011		531.4		
Diesel Combustion Units	Emission Factor (kg/MMBtu)		73.96	0.0006	0.003			0.138	MMBtu/gal
19001	8,175	mass GHG	92.0	0.00075	0.00373	92.0			
	gal/yr	CO_2e	92.0	0.22236	0.09327		92.3		
19002	8,175	mass GHG	92.0	0.00075	0.00373	92.0			
	gal/yr	CO_2e	92.0	0.22236	0.09327		92.3		
19003	7,715	mass GHG	86.8	0.00070	0.00352	86.8			
	gal/yr	CO_2e	86.8	0.20985	0.08802		87.1		
19004	5,723	mass GHG	64.4	0.00052	0.00261	64.4			
	gal/yr	CO_2e	64.4	0.15565	0.06529		64.6		
19005	7,077	mass GHG	79.6	0.00065	0.00323	79.6			
	gal/yr	CO_2e	79.6	0.19248	0.08074		79.9		
19006	7,077	mass GHG	79.6	0.00065	0.00323	79.6			
	gal/yr	CO_2e	79.6	0.19248	0.08074		79.9		

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr
		GWPs [B]	1	298	25		
19007	5,901 gal/yr	mass GHG	66.4	0.00054	0.00269	66.4	
		CO_2e	66.4	0.16051	0.06733		66.6
19008	5,901 gal/yr	mass GHG	66.4	0.00054	0.00269	66.4	
		CO_2e	66.4	0.16051	0.06733		66.6
19009	5,825 gal/yr	mass GHG	65.5	0.00053	0.00266	65.5	
		CO_2e	65.5	0.15843	0.06645		65.8
19010	1,891 gal/yr	mass GHG	21.3	0.00017	0.00086	21.3	
		CO_2e	21.3	0.05142	0.02157		21.3
19013	6,004 gal/yr	mass GHG	67.5	0.00055	0.00274	67.5	
		CO_2e	67.5	0.16329	0.06850		67.8
19014	6,004 gal/yr	mass GHG	67.5	0.00055	0.00274	67.5	
		CO_2e	67.5	0.16329	0.06850		67.8
19015	6,004 gal/yr	mass GHG	67.5	0.00055	0.00274	67.5	
		CO_2e	67.5	0.16329	0.06850		67.8
19016	6,642 gal/yr	mass GHG	74.7	0.00061	0.00303	74.7	
		CO_2e	74.7	0.18066	0.07578		75.0
19017	6,642 gal/yr	mass GHG	74.7	0.00061	0.00303	74.7	
		CO_2e	74.7	0.18066	0.07578		75.0
19018	8,942 gal/yr	mass GHG	100.6	0.00082	0.00408	100.6	
		CO_2e	100.6	0.24320	0.10201		100.9
19019	3,091 gal/yr	mass GHG	34.8	0.00028	0.00141	34.8	
		CO_2e	34.8	0.08408	0.03527		34.9
19020	945 gal/yr	mass GHG	10.6	0.00009	0.00043	10.6	
		CO_2e	10.6	0.02571	0.01078		10.7
19021 - 19025	63,869 gal/yr	mass GHG	718.6	0.00583	0.02915	718.6	
		CO_2e	718.6	1.73715	0.72867		721.0
19301	6,438 gal/yr	mass GHG	72.4	0.00059	0.00294	72.4	
		CO2e	72.4	0.17510	0.07345		72.7
19302	10,168 gal/yr	mass GHG	114.4	0.00093	0.00464	114.4	
		CO_2e	114.4	0.27655	0.11600		114.8
19303	1,737 gal/yr	mass GHG	19.5	0.00016	0.00079	19.5	
		CO_2e	19.5	0.04725	0.01982		19.6

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr
		GWPs [B]	1	298	25		
19304	22,891 gal/yr	mass GHG	257.5	0.00209	0.01045	257.5	
		CO_2e	257.5	0.62260	0.26116		258.4
19305	12,007 gal/yr	mass GHG	135.1	0.00110	0.00548	135.1	
		CO_2e	135.1	0.32658	0.13699		135.6
19306	4,420 gal/yr	mass GHG	49.7	0.00040	0.00202	49.7	
		CO_2e	49.7	0.12021	0.05042		49.9
19307	12,007 gal/yr	mass GHG	135.1	0.00110	0.00548	135.1	
		CO_2e	135.1	0.32658	0.13699		135.6
19308	8,303 gal/yr	mass GHG	93.4	0.00076	0.00379	93.4	
		CO_2e	93.4	0.22583	0.09473		93.7
19310	1,712 gal/yr	mass GHG	19.3	0.00016	0.00078	19.3	
		CO_2e	19.3	0.04656	0.01953		19.3
19311	6,387 gal/yr	mass GHG	71.9	0.00058	0.00291	71.9	
		CO_2e	71.9	0.17372	0.07287		72.1
19312	13,949 gal/yr	mass GHG	156.9	0.00127	0.00637	156.9	
		CO_2e	156.9	0.37939	0.15914		157.5
19313	920 gal/yr	mass GHG	10.3	0.00008	0.00042	10.3	
		CO2e	10.3	0.02501	0.01049		10.4
19314	10,193 gal/yr	mass GHG	114.7	0.00093	0.00465	114.7	
		CO_2e	114.7	0.27725	0.11630		115.1
19315	1,763 gal/yr	mass GHG	19.8	0.00016	0.00080	19.8	
		CO_2e	19.8	0.04795	0.02011		19.9
19316	23,325 gal/yr	mass GHG	262.4	0.00213	0.01064	262.4	
		CO_2e	262.4	0.63441	0.26611		263.3
19317	3,219 gal/yr	mass GHG	36.2	0.00029	0.00147	36.2	
		CO2e	36.2	0.08755	0.03673		36.3
19318	4,036 gal/yr	mass GHG	45.4	0.00037	0.00184	45.4	
		CO_2e	45.4	0.10979	0.04605		45.6
19319	31,015 gal/yr	mass GHG	348.9	0.00283	0.01415	349.0	
		CO_2e	348.9	0.84356	0.35384		350.1
19320	10,168 gal/yr	mass GHG	114.4	0.00093	0.00464	114.4	
		CO_2e	114.4	0.27655	0.11600		114.8

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr
		GWPs [B]	1	298	25		
19321	22,099 gal/yr	mass GHG	248.6	0.00202	0.01008	248.6	
		CO2e	248.6	0.60105	0.25212		249.5
19322	2,401 gal/yr	mass GHG	27.0	0.00022	0.00110	27.0	
		CO_2e	27.0	0.06532	0.02740		27.1
19324	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO_2e	217.0	0.52462	0.22006		217.8
19325	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO_2e	217.0	0.52462	0.22006		217.8
19326	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO2e	217.0	0.52462	0.22006		217.8
19331	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO_2e	217.0	0.52462	0.22006		217.8
19332	23,427 gal/yr	mass GHG	263.6	0.00214	0.01069	263.6	
		CO_2e	263.6	0.63719	0.26728		264.5
19333	23,427 gal/yr	mass GHG	263.6	0.00214	0.01069	263.6	
		CO2e	263.6	0.63719	0.26728		264.5
19334	23,427 gal/yr	mass GHG	263.6	0.00214	0.01069	263.6	
		CO_2e	263.6	0.63719	0.26728		264.5
19335	23,427 gal/yr	mass GHG	263.6	0.00034	0.00169	263.6	
		CO_2e	263.6	0.10075	0.04226		263.7
19338	3,704 gal/yr	mass GHG	41.7	0.00034	0.00169	41.7	
		CO_2e	41.7	0.10075	0.04226		41.8
19339	1,150 gal/yr	mass GHG	12.9	0.00010	0.00052	12.9	
		CO2e	12.9	0.03127	0.01312		13.0
19340	1,763 gal/yr	mass GHG	19.8	0.00016	0.00080	19.8	
		CO_2e	19.8	0.04795	0.02011		19.9
19341	3,551 gal/yr	mass GHG	40.0	0.00032	0.00162	40.0	
		CO_2e	40.0	0.09659	0.04051		40.1
19342	3,704 gal/yr	mass GHG	41.7	0.00034	0.00169	41.7	
		CO_2e	41.7	0.10075	0.04226		41.8
19343	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO2e	217.0	0.52462	0.22006		217.8

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr
		GWPs [B]	1	298	25		
19344	690 gal/yr	mass GHG	7.8	0.00006	0.00031	7.8	
		CO_2e	7.8	0.01876	0.00787		7.8
19345	690 gal/yr	mass GHG	7.8	0.00006	0.00031	7.8	
		CO_2e	7.8	0.01876	0.00787		7.8
19347	690 gal/yr	mass GHG	7.8	0.00006	0.00031	7.8	
		CO_2e	7.8	0.01876	0.00787		7.8
19356	30,478 gal/yr	mass GHG	342.9	0.00278	0.01391	342.9	
		CO2e	342.9	0.82897	0.34772		344.1
19357	4,292 gal/yr	mass GHG	48.3	0.00039	0.00196	48.3	
		CO2e	48.3	0.11674	0.04897		48.5
19358	3,704 gal/yr	mass GHG	41.7	0.00034	0.00169	41.7	
		CO_2e	41.7	0.10075	0.04226		41.8
19359	8,277 gal/yr	mass GHG	93.1	0.00076	0.00378	93.1	
		CO_2e	93.1	0.22513	0.09444		93.4
19360	12,774 gal/yr	mass GHG	143.7	0.00117	0.00583	143.7	
		CO2e	143.7	0.34743	0.14573		144.2
19361	1,252 gal/yr	mass GHG	14.1	0.00011	0.00057	14.1	
		CO2e	14.1	0.03405	0.01428		14.1
19362	9,299 gal/yr	mass GHG	104.6	0.00085	0.00424	104.6	
		CO_2e	104.6	0.25293	0.10609		105.0
19363	4,343 gal/yr	mass GHG	48.9	0.00040	0.00198	48.9	
		CO_2e	48.9	0.11813	0.04955		49.0
19364	6,438 gal/yr	mass GHG	72.4	0.00059	0.00294	72.4	
		CO2e	72.4	0.17510	0.07345		72.7
19365	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO2e	217.0	0.52462	0.22006		217.8
19366	1,712 gal/yr	mass GHG	19.3	0.00016	0.00078	19.3	
		CO_2e	19.3	0.04656	0.01953		19.3
19367	19,288 gal/yr	mass GHG	217.0	0.00176	0.00880	217.0	
		CO_2e	217.0	0.52462	0.22006		217.8
19368	6,055 gal/yr	mass GHG	68.1	0.00055	0.00276	68.1	
		CO2e	68.1	0.16468	0.06908		68.4

Emission Unit ID	Annual Fuel Use from Table 2-J [A]		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	Total GHG Mass Basis ton/yr	Total CO_2e ton/yr
		GWPs [B]	1	298	25		
19369	1,019 gal/yr	mass GHG	11.5	0.00009	0.00047	11.5	
		CO2e	11.5	0.02772	0.01163		11.5
19370 - 19379	127,737 gal/yr	mass GHG	1,437.1	0.01166	0.05829	1,437.2	
		CO_2e	1,437.1	3.47430	1.45734		1,442.1
					Facility Total mass GHG	**19,365.1**	
					Facility Total CO_2e		**19,406.5**

A: The fuel for diesel internal combustion engines units was calculated using the engine horsepower, the brake specific horse power btu/hp-hr), from Table 3.3.1 of AP-42 (7,000 and the number of hours operated per year (500 hrs/yr) (See Table "2J").

B: Current global Warming Potential (GWP) used to calculate CO_2 equivalent (CO_2e) are from Table A-1 of 40 CFR part 98

Emission Calculation Methodology from 40 CFR 98 Subpart C Equation :

Emissions (short ton/yr) = $1.0231x10^{-3}$ * Fuel Throughput [scf/yr] * HHV [MMBtu/scf] * EF [kg/MMBtu]

Where: Emission are the mass emissions for the specific pollutant.

Fuel = Annual volume of fuel use as noted in Table 2-J of this application.
(express volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 (MMBtu per volume).

EF = Fuel-specific default pollutant emission factor, from Tables C-1 and C-2 of 40 CFR Part 98 (kg pollutant /mmBtu).

1.10231×10^{-3} = Conversion factor from kilograms to short tons.

Conversion factor from kilograms to short tons is from Table A-2 to Subpart A of Part 98—Units of Measure Conversions for (Kilograms to Pounds of 2.20462) / (2000 pounds per short ton).

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.

Table 7-1 below summarizes the information used to determine emissions from the sources addressed in this permit application.

Table 7-1
Emission Calculation Information Sources

Source Category	Reference	Emission Factors for:	Comment/Reference Page Numbers
External Combustion	AP-42 Table 1.4-1	NO_X, CO	Page 1.4-5 (natural gas)
	AP-42 Table 1.4-2	Pb, PM, SO_2, VOC	Page 1.4-6 (natural gas)
	AP-42 Table 1.4-3	HAP (hexane)	Pages 1.4-7 and -8 (natural gas)
	AP-42 Table 1.4-4	HAP (metals)	Page 1.4-9 (natural gas)
Fuel Dispensing	AP-42 Table 5.2-7	VOC	Page 5.2-15
	Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations	HAP	Cover Page, Table 6-5 - HAP Speciation of Fuels Commonly Used at USAF Installations (Page 119)
Gasoline Fuel Distribution	AP-42 Section 5.2 equation 1	VOC	Page 5.2-4
	AP-42 Table 5.2-1	--	Saturation factor for use in equation 1; Page 5.2-5
	AP-42 Table 7.1-2	--	Properties of gasoline for use in equation 1; Page 7.1-49

Source Category	Reference	Emission Factors for:	Comment/Reference Page Numbers
	Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations	HAP	Cover Page, Table 6-5 - HAP Speciation of Fuels Commonly Used at USAF Installations (Page 119)
Internal Combustion	AP-42 Table 3.3-1	NO_X, CO, SO_X, PM_{10}, VOC	Page 3.3-6
	AP-42 Table 3.4-1	NO_X, CO, SO_X, PM_{10}, VOC	Page 3.4-5
	40 CFR 60 Subpart IIII	NOx, CO, PM	Tables 1, 2, and 4
	40 CFR 89.112	NOx, CO, PM	Table 1 – emission standards
Surface Coating	Test Results	--	Control efficiency
	Manufacturer Specification sheets	--	Control efficiency and manometer readings. Also see UA2 workbook spreadsheet "Surface Coating (Controls)
Storage Tanks	AP-42 Table 7.1-7	--	Clayton, NM data for calculating tank emissions; Page 7.1-59
	TANKS 4.09b	--	EPA TANKS calculations for storage tanks; Page 7.29-49
	Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations	HAP	Cover Page, Table 6-5 - HAP Speciation of Fuels Commonly Used at USAF Installations (Page 119)
Greenhouse Gases	40 CFR 98 Subparts A and C Tables A-1, A-2, C1, and C-2	GHGs and GWPs	Subpart A Tables A-1 and A-2. Subpart C Equation C-1, 40 CFR 98.33(a)(1)(i). Subpart C Tables C-1 and C-2.

7.1 External Combustion Emission Factor References for Boilers and Heaters
(USEPA AP-42 Tables 1.4-1 through 1.4-4)

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION[a]

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x[b]		CO	
	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS)[c]	280	A	84	B
Uncontrolled (Post-NSPS)[c]	190	A	84	B
Controlled - Low NO_x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO_x burners	50	D	84	B
Controlled - Low NO_x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ scf to lb/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. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

[c] NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

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. $CO_2[lb/10^6 scf] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ 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 (Continued)

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.

7.2 Fuel Dispensing VOC Emission Factor Reference (USEPA AP-42 Table 5.2-7)

Table 5.2-7 (Metric And English Units). EVAPORATIVE EMISSIONS FROM GASOLINE SERVICE STATION OPERATIONS[a]

Emission Source	Emission Rate	
	mg/L Throughput	lb/10^3 gal Throughput
Filling underground tank (Stage I)		
Submerged filling	880	7.3
Splash filling	1,380	11.5
Balanced submerged filling	40	0.3
Underground tank breathing and emptying[b]	120	1.0
Vehicle refueling operations (Stage II)		
Displacement losses (uncontrolled)[c]	1,320	11.0
Displacement losses (controlled)	132	1.1
Spillage	80	0.7

[a] Factors are for VOC as well as total organic emissions, because of the methane and ethane content of gasoline evaporative emissions is negligible.
[b] Includes any vapor loss between underground tank and gas pump.
[c] Based on Equation 6, using average conditions.

A second source of vapor emissions from service stations is underground tank breathing. Breathing losses occur daily and are attributable to gasoline evaporation and barometric pressure changes. The frequency with which gasoline is withdrawn from the tank, allowing fresh air to enter to enhance evaporation, also has a major effect on the quantity of these emissions. An average breathing emission rate is 120 mg/L (1.0 lb/1000 gal) of throughput.

5.2.2.3 Motor Vehicle Refueling -

Service station vehicle refueling activity also produces evaporative emissions. Vehicle refueling emissions come from vapors displaced from the automobile tank by dispensed gasoline and from spillage. The quantity of displaced vapors depends on gasoline temperature, auto tank temperature, gasoline RVP, and dispensing rate. Equation 6 can be used to estimate uncontrolled displacement losses from vehicle refueling for a particular set of conditions.[14]

$$E_R = 264.2\ [(-5.909) - 0.0949\ (\Delta T) + 0.0884\ (T_D) + 0.485\ (RVP)] \quad (6)$$

where:

E_R = refueling emissions, mg/L
ΔT = difference between temperature of fuel in vehicle tank and temperature of dispensed fuel, °F
T_D = temperature of dispensed fuel, °F
RVP = Reid vapor pressure, psia

Note that this equation and the spillage loss factor are incorporated into the *MOBILE* model. The *MOBILE* model allows for disabling of this calculation if it is desired to include these emissions in the stationary area source portion of an inventory rather than in the mobile source portion. It is estimated that the uncontrolled emissions from vapors displaced during vehicle refueling average 1320 mg/L (11.0 lb/1000 gal) of dispensed gasoline.[5,13]

Spillage loss is made up of contributions from prefill and postfill nozzle drip and from spit-back and

7.3 Fuel Loading Equation and Fuel Properties (USEPA AP-42 Sections 5 & 7)

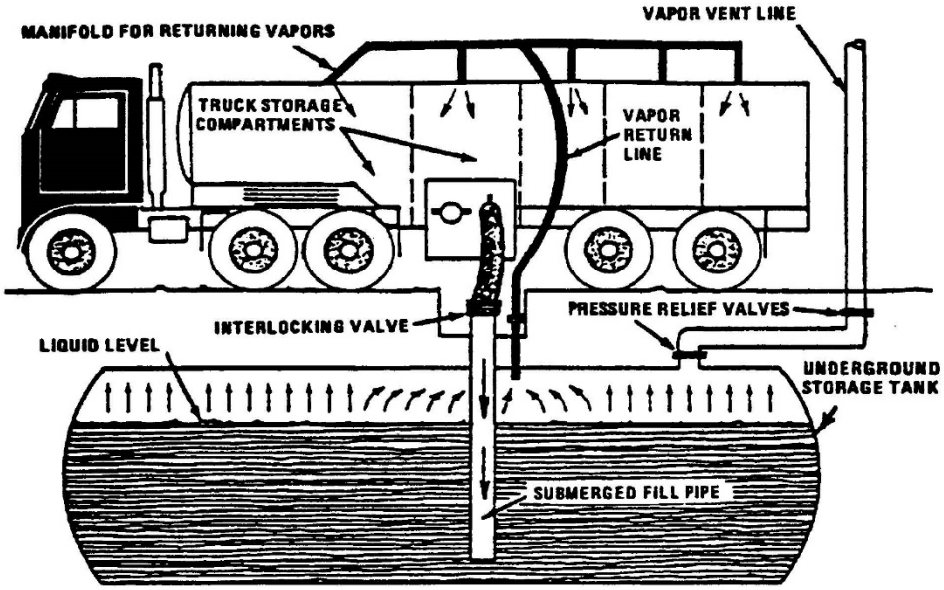

Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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.

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)

Table 7.1-2. PROPERTIES (M_V, P_{VA}, W_L) OF SELECTED PETROLEUM LIQUIDS[a]

Petroleum Liquid	Vapor Molecular Weight at 60°F, M_V (lb/lb-mole)	Liquid Density At 60°F, W_L (lb/gal)	True Vapor Pressure, P_{VA} (psi)						
			40°F	50°F	60°F	70°F	80°F	90°F	100°F
Crude oil RVP 5	50	7.1	1.8	2.3	2.8	3.4	4.0	4.8	5.7
Distillate fuel oil No. 2	130	7.1	0.0031	0.0045	0.0065	0.0090	0.012	0.016	0.022
Gasoline RVP 7	68	5.6	2.3	2.9	3.5	4.3	5.2	6.2	7.4
Gasoline RVP 7.8	68	5.6	2.5929	3.2079	3.9363	4.793	5.7937	6.9552	8.2952
Gasoline RVP 8.3	68	5.6	2.7888	3.444	4.2188	5.1284	6.1891	7.4184	8.8344
Gasoline RVP 10	66	5.6	3.4	4.2	5.2	6.2	7.4	8.8	10.5
Gasoline RVP 11.5	65	5.6	4.087	4.9997	6.069	7.3132	8.7519	10.4053	12.2949
Gasoline RVP 13	62	5.6	4.7	5.7	6.9	8.3	9.9	11.7	13.8
Gasoline RVP 13.5	62	5.6	4.932	6.0054	7.2573	8.7076	10.3774	12.2888	14.4646
Gasoline RVP 15.0	60	5.6	5.5802	6.774	8.1621	9.7656	11.6067	13.7085	16.0948
Jet kerosene	130	7.0	0.0041	0.0060	0.0085	0.011	0.015	0.021	0.029
Jet naphtha (JP-4)	80	6.4	0.8	1.0	1.3	1.6	1.9	2.4	2.7
Residual oil No. 6	190	7.9	0.00002	0.00003	0.00004	0.00006	0.00009	0.00013	0.00019

[a] References 10 and 11

7.4 Gasoline HAP Speciation and Properties for Fuel Dispensing, Fuel Loading, and Storage Tanks

Tables shown below are from the *Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations", August 2018.*

Table 6-5. HAP Speciation of Fuels Commonly Used at USAF Installations

Compound	Typical wt. %					
	Diesel		Gasoline		JP-8/Jet A[a]	
	Liquid Phase	Vapor Phase[b]	Liquid Phase	Vapor Phase[b]	Liquid Phase	Vapor Phase[b]
Anthracene	2.83E-03[c]	---	---	---	---	---
Benzene	8.00E-04	1.96E-01	1.80E+00	6.18E-01	3.38E-02	1.58E+00
1,3-Butadiene	---	---	2.00E-04[c]	1.62E-03	---	---
Cumene (Isopropylbenzene)	---	---	5.00E-01	7.79E-03	1.81E-01	3.83E-01
Dibenzofuran	1.64E-02[c]	---	---	---	---	---
Ethylbenzene	1.30E-02	3.10E-01	1.40E+00	4.67E-02	1.59E-01	7.20E-01
Fluorene	2.94E-02[c]	---	---	---	3.44E-03	---
Hexane	1.00E-04	3.98E-02	1.00E+00	5.57E-01	---	---
Isooctane (2,2,4-Trimethyl Pentane)	---	---	4.00E+00	7.11E-01	1.23E-03	2.97E-02
Naphthalene	3.39E-01[c]	2.15E-01	1.74E-01[c]	1.54E-04	2.68E-01	3.23E-02
Phenanthrene	3.22E-02[c]	---	---	---	---	---
Phenylbenzene (1,1'-biphenyl)	---	---	---	---	6.78E-02	---
Pyrene	3.62E-02[c]	---	---	---	1.00E-05	---
Toluene	3.20E-02	2.30E+00	7.00E+00	7.05E-01	2.19E-01	3.00E+00
Xylenes	2.90E-01	7.19E+00	7.00E+00	2.43E-01	1.19E+00	5.61E-02

SOURCE (Unless otherwise stated): Data taken from USEPA 2005, TANKS, Version 4.09d, U.S. Environmental Protection Agency, October 2005. wt. % = weight percent.

a) SOURCE: "JP-8 Composition and Variability," Armstrong Laboratory, Environics Directorate, Environmental Research Division, May 1996. An average density of 6.67 pounds per gallon (lb/gal) was used for unit conversion.

b) The vapor phase speciation data was estimated using the liquid phase speciation data and equations found in Section 7.1.4 of AP-42, Fifth Edition, Volume I last updated November 2006. Physical properties for fuels used for calculations can be found below, in Table 6-6.

c) SOURCE: SPECIATE, Version 4.4, U.S. Environmental Protection Agency, February 2014.

"---" No data available

Table 6-6. Fuel Properties

Fuel	Liquid Molecular Weight (lb/lb-mol)	Vapor Molecular Weight (lb/lb-mol)	Vapor Pressure (psia)[b]
JP-8/Jet A	162	130	4.08E-02[c]
Diesel	188	130	9.00E-03
Gasoline[a]	92	66	6.20E+00

SOURCE (Unless otherwise stated): Data taken from USEPA 2005, TANKS, Version 4.09d, U.S. Environmental Protection Agency, October 2005.

a) Based on gasoline with a Reid Vapor Pressure of 10.

b) Based on Temperature of 70 degrees Fahrenheit (°F).

c) SOURCE: "JP-8 Volatility Study," Southwest Research Institute, March 2001. Vapor pressures calculated using the composite data calculation, an average flash point temperature of 118.238 (°F), and atmospheric pressure of 760 millimeters of mercury (mmHg). Flash point temperature average provided by "Petroleum Quality Information System Fuels Data (2005)," Defense Logistics Agency, Defense Energy Support Center, Technology and Standardization Division, 2006.

7.5 Internal Combustion Emission Factor References (USEPA AP-42 Tables 3.3-1, 3.4-1 and NSPS Tables from 40 CFR 60 Subpart IIII, 40 CFR 89.112, and 40 CFR 1039)

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

3.3-6 EMISSION FACTORS 10/96

Table 3.4-1. GASEOUS EMISSION FACTORS FOR LARGE STATIONARY DIESEL AND ALL STATIONARY DUAL-FUEL ENGINES[a]

Pollutant	Diesel Fuel (SCC 2-02-004-01)			Dual Fuel[b] (SCC 2-02-004-02)		
	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	EMISSION FACTOR RATING	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	EMISSION FACTOR RATING
NO_x						
Uncontrolled	0.024	3.2	B	0.018	2.7	D
Controlled	0.013[c]	1.9[c]	B	ND	ND	NA
CO	5.5 E-03	0.85	C	7.5 E-03	1.16	D
SO_x[d]	8.09 E-03S_1	1.01S_1	B	4.06 E-04S_1 + 9.57 E-03S_2	0.05S_1 + 0.895S_2	B
CO_2[e]	1.16	165	B	0.772	110	B
PM	0.0007[c]	0.1[c]	B	ND	ND	NA
TOC (as CH_4)	7.05 E-04	0.09	C	5.29 E-03	0.8	D
Methane	f	f	E	3.97 E-03	0.6	E
Nonmethane	f	f	E	1.32 E-03	0.2[g]	E

[a] Based on uncontrolled levels for each fuel, from References 2,6-7. When necessary, the average heating value of diesel was assumed to be 19,300 Btu/lb with a density of 7.1 lb/gallon. The power output and fuel input values were averaged independently from each other, because of the use of actual brake-specific fuel consumption (BSFC) values for each data point and of the use of data possibly sufficient to calculate only 1 of the 2 emission factors (e. g., enough information to calculate lb/MMBtu, but not lb/hp-hr). Factors are based on averages across all manufacturers and duty cycles. The actual emissions from a particular engine or manufacturer could vary considerably from these levels. 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.

[b] Dual fuel assumes 95% natural gas and 5% diesel fuel.

[c] References 8-26. Controlled NO_x is by ignition timing retard.

[d] Assumes that all sulfur in the fuel is converted to SO_2. S_1 = % sulfur in fuel oil; S_2 = % sulfur in natural gas. For example, if sulfer content is 1.5%, then S = 1.5.

[e] Assumes 100% conversion of carbon in fuel to CO_2 with 87 weight % carbon in diesel, 70 weight % carbon in natural gas, dual-fuel mixture of 5% diesel with 95% natural gas, average BSFC of 7,000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and natural gas heating value of 1050 Btu/scf.

[f] Based on data from 1 engine, TOC is by weight 9% methane and 91% nonmethane.

[g] Assumes that nonmethane organic compounds are 25% of TOC emissions from dual-fuel engines. Molecular weight of nonmethane gas stream is assumed to be that of methane.

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_x	HC	NO_x	CO	PM
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

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Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder

[As stated in §60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO_x + NMHC	CO	PM
KW<8 (HP<11)	2008 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

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Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NO_x	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011 +	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010 +[2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008 +	6.4 (4.8)		0.20 (0.15)

[1]For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2]For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3]In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

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Table 1 to 40 CFR 89.112 (Nonroad Diesel Engine Emission Standards) [2007 Model year and later < 3000hp]

Table 1.—Emission Standards (g/kW-hr)

Rated Power (kW)	Tier	Model Year[1]	NOx	HC	NMHC + NOx	CO	PM
kW<8	Tier 1	2000	—	—	10.5	8.0	1.0
	Tier 2	2005	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000	—	—	9.5	6.6	0.80
	Tier 2	2005	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	1999	—	—	9.5	5.5	0.80
	Tier 2	2004	—	—	7.5	5.5	0.60
37≤kW<75	Tier 1	1998	9.2	—	—	—	—
	Tier 2	2004	—	—	7.5	5.0	0.40
	Tier 3	2008	—	—	4.7	5.0	
75≤kW<130	Tier 1	1997	9.2	—	—	—	—
	Tier 2	2003	—	—	6.6	5.0	0.30
	Tier 3	2007	—	—	4.0	5.0	
130≤kW<225	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2003	—	—	6.6	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
225≤kW<450	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2001	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
450≤kW≤560	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2002	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
kW>560	Tier 1	2000	9.2	1.3	—	11.4	0.54
	Tier 2	2006	—	—	6.4	3.5	0.20

[1] The model years listed indicate the model years for which the specified tier of standards take effect.

Table 1 of §1039.101—Tier 4 Exhaust Emission Standards After the 2014 Model Year, g/kW-hr[a]

Maximum Engine Power	Application	PM	NOx	NMHC	NOx+NMHC	CO
kW < 19	All	0.40[b]	-	-	7.5	6.6[c]
19 ≤ kW < 56	All	0.03	-	-	4.7	5.0[d]
56 ≤ kW < 130	All	0.02	0.40	0.19	-	5.0
130 ≤ kW ≤560	All	0.02	0.40	0.19	-	3.5
kW > 560	Generator sets	0.03	0.67	0.19	-	3.5
kW > 560	All except generator sets	0.04	3.5	0.19	-	3.5

[a]Note that some of these standards also apply for 2014 and earlier model years. This table presents the full set of emission standards that apply after all the transition and phase-in provisions of §1039.102 expire.
[b]See paragraph (c) of this section for provisions related to an optional PM standard for certain engines below 8 kW.
[c]The CO standard is 8.0 g/kW-hr for engines below 8 kW.
[d]The CO standard is 5.5 g/kW-hr for engines below 37 kW.

Table 1 of §1039.102—Tier 4 Exhaust Emission Standards (g/kW-hr): kW <19

Maximum engine power	Model years	PM	NOx + NMHC	CO
kW <8	2008-2014	0.40[a]	7.5	8.0
8 ≤kW <19	2008-2014	0.40	7.5	6.6

[a]For engines that qualify for the special provisions in §1039.101(c), you may delay certifying to the standards in this part until 2010. In 2009 and earlier model years, these engines must instead meet the applicable Tier 2 standards and other requirements identified in appendix I of this part. Starting in 2010, these engines must meet a PM standard of 0.60 g/kW-hr, as described in §1039.101(c). Engines certified to the 0.60 g/kWhr PM standard may not generate ABT credits.
* * * * *

Table 2 of § 1039.102 - Interim Tier 4 Exhaust Emission Standards (g/kW-hr): 19 ≤kW <37

Model years	PM	NO_X + NMHC	CO
2008-2012	0.30	7.5	5.5
2013-2014	0.03	4.7	5.5

7.6 Surface Coating

Cannon AFB estimates that hard copies of all SDSs would be approximately 1,500 to 2,000 pages. NMED AQB staff confirmed during preparation of previous Title V permit applications that hard copies of the SDS were not desired. The SDSs at Cannon AFB are managed electronically using an Air Force database called EESOH-MIS. Copies of SDS records can be provided upon request.

Included in this section are copies of the test reports and/or manufacturer specifications for the filters used in the permitted paint booths at Cannon AFB.

Paint Booth 21003 Filter Test Data

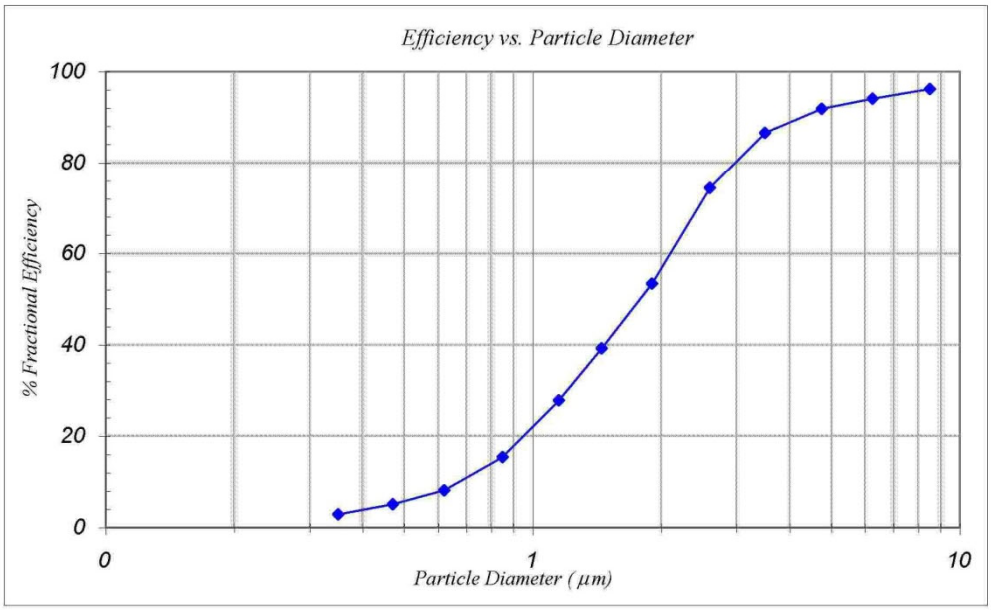
February 27, 2005

INITIAL 52.2 TEST REPORT
LMS Technologies, Inc.

P. O. Box 24185
Edina, Minnesota 55424 U.S.A.
Tel.: (952)-918-9060
Fax: (952) 918-9061

Test Type :	*Fractional Efficiency*	***Test Requested By:***	*A.J. Dralle*
Test Number:	*T022706A*	***Filter Mfgr:***	
Flow Rate/Velocity:	*120fpm*	***Media Mfgr.:***	
Test Aerosol:	*KCl , Neutralized*	***Filter/Media ID # :***	*SFR Panel (R-R1/4MW)*
ΔP ("H2O):	*0.392*		
Size:	*20 x 20*		

Size Range(μm)	***Initial*** *Fractional Efficiency(%)*
0.3-0.4	2.9
0.4-0.55	5.1
0.55-0.7	8.2
0.7-1.0	15.5
1.0-1.3	27.9
1.3-1.6	39.3
1.6-2.2	53.4
2.2-3.0	74.4
3.0-4.0	86.6
4.0-5.5	91.9
5.5-7.0	94.1
7.0-10.0	96.2



TEST SUPERVISOR
*MICK FLOM*_____

ENGINEERING APPROVAL
*K.C. KWOK, PH.D.*_____

Paint Booth 21005 and 21006 User Supplied Information

Operating Information

- Number of paint spray guns to be used at the facility.
  - **Average number of guns to be used in facility at any time will be 3**
- Maximum number of spray guns that can be used simultaneously.
  - **Maximum number of paint guns that would be used simultaneously would be 5**
- Manufacturer and model of paint spray guns.
  - **DeVilbiss EXL HVLP GRAVITY Feed Spray Gun**
  - **DeVilbiss COMPACT 507, HVLP, PRESSURE Spray Gun**
- Filter type and efficiency.

FILTER USE	FREQUENCY	VENDER	TOTAL PER CHANGE (EACH, BOX OR CASE)	CHANGES PER YEAR	Filter Efficiency
FILTERS FOR SMALL SPRAY BOOTH PN# P-8198 (PART # 714282) (20 UNITS PER BOX)	MONTHLY	TRI-CHEM CORPORATION 431 STEPHENSON HIGHWAY TROY, MICHIGAN 48083	4	12	Overall Arrestance Efficiency: 99.84% Fractional Arrestance Efficiency 20 microns 100.0% 10 microns 99.8% 5 microns 84.5% 2.5 microns 4.2%
PRE- FILTERS FOR HANGER SPRAY BOOTH (CPA PAD) FIRST STAGE FILTER, 60" x 300' ROLL (PART # 710219)	QUARTERLY	TRI-CHEM CORPORATION 431 STEPHENSON HIGHWAY TROY, MICHIGAN 48083	2	4	Liquid Phase Efficiency Particle Size 98.3% >1.88 micron 94.5% >0.94 micron 82.4% >0.37 micron Solid Phase Solid Phase 99.3% >2.14 micron 97.7% >0.87 micron 94.5% >0.59 micron
SECOND STAGE PAINT FILTERS FOR HANGER SPRAY BOOTH 24" x 24" x 2" (PART # 713662) (12 PER BOX)	BI-ANNUALLY	TRI-CHEM CORPORATION 431 STEPHENSON HIGHWAY TROY, MICHIGAN 48083	28	2	
THIRD STAGE FILTERS FOR HANGER SPRAY BOOTH 24" x 24" x 15" (PART # 713781) (4 PER BOX)	EVERY 2 YEARS (WE BUY 1/2 PER YEAR)	TRI-CHEM CORPORATION 431 STEPHENSON HIGHWAY TROY, MICHIGAN 48083	320	0.5	

7.7 Greenhouse Gas Reference Tables from 40 CFR 98

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of May 4, 2015

Title 40 → Chapter I → Subchapter C → Part 98 → Subpart A → Appendix

Title 40: Protection of Environment
PART 98—MANDATORY GREENHOUSE GAS REPORTING
Subpart A—General Provision

TABLE A-1 TO SUBPART A OF PART 98—GLOBAL WARMING POTENTIALS

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Chemical-Specific GWPs			
Carbon dioxide	124-38-9	CO_2	1
Methane	74-82-8	CH_4	a25
Nitrous oxide	10024-97-2	N_2O	a298
Fully Fluorinated GHGs			
Sulfur hexafluoride	2551-62-4	SF_6	a22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF_5CF_3	17,700
Nitrogen trifluoride	7783-54-2	NF_3	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF_4	a7,390
PFC-116 (Perfluoroethane)	76-16-4	C_2F_6	a12,200
PFC-218 (Perfluoropropane)	76-19-7	C_3F_8	a8,830
Perfluorocyclopropane	931-91-9	$C-C_3F_6$	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C_4F_{10}	a8,860
PFC-318 (Perfluorocyclobutane)	115-25-3	$C-C_4F_8$	a10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C_5F_{12}	a9,160
PFC-5-1-14 (Perfluorohexane, FC-72)	355-42-0	C_6F_{14}	a9,300
PFC-6-1-12	335-57-9	C_7F_{16}; $CF_3(CF_2)_5CF_3$	b7,820
PFC-7-1-18	307-34-6	C_8F_{18}; $CF_3(CF_2)_6CF_3$	b7,620
PFC-9-1-18	306-94-5	$C_{10}F_{18}$	7,500
PFPMIE (HT-70)	NA	$CF_3OCF(CF_3)CF_2OCF_2OCF_3$	10,300
Perfluorodecalin (cis)	60433-11-6	$Z-C_{10}F_{18}$	b7,236
Perfluorodecalin (trans)	60433-12-7	$E-C_{10}F_{18}$	b6,288
Saturated Hydrofluorocarbons (HFCs) With Two or Fewer Carbon-Hydrogen Bonds			
HFC-23	75-46-7	CHF_3	a14,800
HFC-32	75-10-5	CH_2F_2	a675
HFC-125	354-33-6	C_2HF_5	a3,500
HFC-134	359-35-3	$C_2H_2F_4$	a1,100
HFC-134a	811-97-2	CH_2FCF_3	a1,430
HFC-227ca	2252-84-8	$CF_3CF_2CHF_2$	b2640
HFC-227ea	431-89-0	C_3HF_7	a3,220
HFC-236cb	677-56-5	$CH_2FCF_2CF_3$	1,340
HFC-236ea	431-63-0	CHF_2CHFCF_3	1,370
HFC-236fa	690-39-1	$C_3H_2F_6$	a9,810
HFC-329p	375-17-7	$CHF_2CF_2CF_2CF_3$	b2360
HFC-43-10mee	138495-42-8	$CF_3CFHCFHCF_2CF_3$	a1,640
Saturated Hydrofluorocarbons (HFCs) With Three or More Carbon-Hydrogen Bonds			
HFC-41	593-53-3	CH_3F	a92
HFC-143	430-66-0	$C_2H_3F_3$	a353
HFC-143a	420-46-2	$C_2H_3F_3$	a4,470

Table A-2 to Subpart A of Part 98—Units of Measure Conversions

To convert from	To	Multiply by
Kilograms (kg)	Pounds (lbs)	2.20462
Pounds (lbs)	Kilograms (kg)	0.45359
Pounds (lbs)	Metric tons	4.53592×10^{-4}
Short tons	Pounds (lbs)	2,000
Short tons	Metric tons	0.90718
Metric tons	Short tons	1.10231
Metric tons	Kilograms (kg)	1,000
Cubic meters (m^3)	Cubic feet (ft^3)	35.31467
Cubic feet (ft^3)	Cubic meters (m^3)	0.028317
Gallons (liquid, US)	Liters (l)	3.78541
Liters (l)	Gallons (liquid, US)	0.26417
Barrels of Liquid Fuel (bbl)	Cubic meters (m^3)	0.15891
Cubic meters (m^3)	Barrels of Liquid Fuel (bbl)	6.289
Barrels of Liquid Fuel (bbl)	Gallons (liquid, US)	42
Gallons (liquid, US)	Barrels of Liquid Fuel (bbl)	0.023810
Gallons (liquid, US)	Cubic meters (m^3)	0.0037854
Liters (l)	Cubic meters (m^3)	0.001
Feet (ft)	Meters (m)	0.3048
Meters (m)	Feet (ft)	3.28084
Miles (mi)	Kilometers (km)	1.60934
Kilometers (km)	Miles (mi)	0.62137
Square feet (ft^2)	Acres	2.29568×10^{-5}
Square meters (m^2)	Acres	2.47105×10^{-4}
Square miles (mi^2)	Square kilometers (km^2)	2.58999
Degrees Celsius (°C)	Degrees Fahrenheit (°F)	°C = (5/9) × (°F −32)
Degrees Fahrenheit (°F)	Degrees Celsius (°C)	°F = (9/5) × °C + 32
Degrees Celsius (°C)	Kelvin (K)	K = °C + 273.15
Kelvin (K)	Degrees Rankine (°R)	1.8
Joules	Btu	9.47817×10^{-4}
Btu	MMBtu	1×10^{-6}
Pascals (Pa)	Inches of Mercury (in Hg)	2.95334×10^{-4}
Inches of Mercury (inHg)	Pounds per square inch (psi)	0.49110
Pounds per square inch (psi)	Inches of Mercury (in Hg)	2.03625

Table C-1 to Subpart C of Part 98—Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel

DEFAULT CO_2 EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL

Fuel type	Default high heat value	Default CO_2 emission factor
Coal and coke	mmBtu/short ton	kg CO_2/mmBtu
Anthracite	25.09	103.69
Bituminous	24.93	93.28
Subbituminous	17.25	97.17
Lignite	14.21	97.72
Coal Coke	24.80	113.67
Mixed (Commercial sector)	21.39	94.27
Mixed (Industrial coking)	26.28	93.90
Mixed (Industrial sector)	22.35	94.67
Mixed (Electric Power sector)	19.73	95.52
Natural gas	mmBtu/scf	kg CO_2/mmBtu
(Weighted U.S. Average)	1.026×10^{-3}	53.06
Petroleum products	mmBtu/gallon	kg CO_2/mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.138	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG)[1]	0.092	61.71
Propane[1]	0.091	62.87
Propylene[2]	0.091	67.77
Ethane[1]	0.068	59.60
Ethanol	0.084	68.44
Ethylene[2]	0.058	65.96
Isobutane[1]	0.099	64.94
Isobutylene[1]	0.103	68.86
Butane[1]	0.103	64.77
Butylene[1]	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.88
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02
Petrochemical Feedstocks	0.125	71.02
Petroleum Coke	0.143	102.41

M)/100)*HHV_d where HHV_w = wet basis HHV, M = moisture content (percent) and HHV_d = dry basis HHV from Table C-1.

[78 FR 71950, Nov. 29, 2013]

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Table C-2 to Subpart C of Part 98—Default CH_4 and N_2O Emission Factors for Various Types of Fuel

Fuel type	Default CH_4 emission factor (kg CH_4/mmBtu)	Default N_2O emission factor (kg N_2O/mmBtu)
Coal and Coke (All fuel types in Table C-1)	1.1×10^{-02}	1.6×10^{-03}
Natural Gas	1.0×10^{-03}	1.0×10^{-04}
Petroleum (All fuel types in Table C-1)	3.0×10^{-03}	6.0×10^{-04}
Fuel Gas	3.0×10^{-03}	6.0×10^{-04}
Municipal Solid Waste	3.2×10^{-02}	4.2×10^{-03}
Tires	3.2×10^{-02}	4.2×10^{-03}
Blast Furnace Gas	2.2×10^{-05}	1.0×10^{-04}
Coke Oven Gas	4.8×10^{-04}	1.0×10^{-04}
Biomass Fuels—Solid (All fuel types in Table C-1, except wood and wood residuals)	3.2×10^{-02}	4.2×10^{-03}
Wood and wood residuals	7.2×10^{-03}	3.6×10^{-03}
Biomass Fuels—Gaseous (All fuel types in Table C-1)	3.2×10^{-03}	6.3×10^{-04}
Biomass Fuels—Liquid (All fuel types in Table C-1)	1.1×10^{-03}	1.1×10^{-04}

Note: Those employing this table are assumed to fall under the IPCC definitions of the "Energy Industry" or "Manufacturing Industries and Construction". In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC "Energy Industry" category may employ a value of 1g of CH_4/mmBtu.

[78 FR 71952, Nov. 29, 2013]

§98.33 Calculating GHG emissions.

You must calculate CO_2 emissions according to paragraph (a) of this section, and calculate CH_4 and N_2O emissions according to paragraph (c) of this section.

(a) *CO_2 emissions from fuel combustion.* Calculate CO_2 mass emissions by using one of the four calculation methodologies in paragraphs (a)(1) through (a)(4) of this section, subject to the applicable conditions, requirements, and restrictions set forth in paragraph (b) of this section. Alternatively, for units that meet the conditions of paragraph (a)(5) of this section, you may use CO_2 mass emissions calculation methods from part 75 of this chapter, as described in paragraph (a)(5) of this section. For units that combust both biomass and fossil fuels, you must calculate and report CO_2 emissions from the combustion of biomass separately using the methods in paragraph (e) of this section, except as otherwise provided in paragraphs (a)(5)(iv) and (e) of this section and in §98.36(d).

(1) *Tier 1 Calculation Methodology.* Calculate the annual CO_2 mass emissions for each type of fuel by using Equation C-1, C-1a, or C-1b of this section (as applicable).

(i) Use Equation C-1 except when natural gas billing records are used to quantify fuel usage and gas consumption is expressed in units of therms or million Btu. In that case, use Equation C-1a or C-1b, as applicable.

$$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-1)}$$

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where:

CO_2 = Annual CO_2 mass emissions for the specific fuel type (metric tons).

Fuel = Mass or volume of fuel combusted per year, from company records as defined in §98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).

HHV = Default high heat value of the fuel, from Table C-1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).

EF = Fuel-specific default CO_2 emission factor, from Table C-1 of this subpart (kg CO_2/mmBtu).

1×10^{-3} = Conversion factor from kilograms to metric tons.

7.8 Storage Tanks Emission Calculation Reference (USEPA AP-42 Table 7.1-7)

Table 7.1-7 (cont.).

Location	Property		Monthly Averages												Annual Average
	Symbol	Units	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Roswell, NM	T_{AX}	°F	55.4	60.4	67.7	76.9	85.0	93.1	93.7	91.3	84.9	75.8	63.1	56.7	75.3
	T_{AN}	°F	27.4	31.4	37.9	46.8	55.6	64.8	69.0	67.0	59.6	47.5	35.0	28.2	47.5
	I	Btu/ft²-d	1047	1373	1807	2218	2459	2610	2441	2242	1913	1527	1131	952	1810
Buffalo, NY	T_{AX}	°F	30.0	31.4	40.4	54.4	65.9	75.6	80.2	78.2	71.4	60.2	47.0	35.0	55.8
	T_{AN}	°F	17.0	17.5	25.6	36.3	46.3	56.4	61.2	59.6	52.7	42.7	33.6	22.5	39.3
	I	Btu/ft²-d	349	546	889	1315	1597	1804	1776	1513	1152	784	403	283	1034
New York, NY (LaGuardia Airport)	T_{AX}	°F	37.4	39.2	47.3	59.6	69.7	78.7	83.9	82.3	75.2	64.5	52.9	41.5	61.0
	T_{AN}	°F	26.1	27.3	34.6	44.2	53.7	63.2	68.9	68.2	61.2	50.5	41.2	30.8	47.5
	I	Btu/ft²-d	548	795	1118	1457	1690	1802	1784	1583	1280	951	593	457	1171
Cleveland, OH	T_{AX}	°F	32.5	34.8	44.8	57.9	68.5	78.0	81.7	80.3	74.2	62.7	49.3	37.5	58.5
	T_{AN}	°F	18.5	19.9	28.4	38.3	47.9	57.2	61.4	60.5	54.0	43.6	34.3	24.6	40.7
	I	Btu/ft²-d	388	601	922	1350	1681	1843	1828	1583	1240	867	466	318	1091
Columbus, OH	T_{AX}	°F	34.7	38.1	49.3	62.3	72.6	81.3	84.4	83.0	76.9	65.0	50.7	39.4	61.5
	T_{AN}	°F	19.4	21.5	30.6	40.5	50.2	59.0	63.2	61.7	54.6	42.8	33.5	24.7	41.8
	I	Btu/ft²-d	459	677	980	1353	1647	1813	1755	1641	1282	945	538	387	1123
Toledo, OH	T_{AX}	°F	30.7	34.0	44.6	59.1	70.5	79.9	83.4	81.8	75.1	63.3	47.9	35.5	58.8
	T_{AN}	°F	15.5	17.5	26.1	36.5	46.6	56.0	60.2	58.4	51.2	40.1	30.6	20.6	38.3
	I	Btu/ft²-d	435	680	997	1384	1717	1878	1849	1616	1276	911	498	355	1133
Oklahoma City, OK	T_{AX}	°F	46.6	52.2	61.0	71.7	79.0	87.6	93.5	92.8	84.7	74.3	59.9	50.7	71.2
	T_{AN}	°F	25.2	29.4	37.1	48.6	57.7	66.3	70.6	69.4	61.9	50.2	37.6	29.1	48.6
	I	Btu/ft²-d	801	1055	1400	1725	1918	2144	2128	1950	1554	1233	901	725	1461
Tulsa, OK	T_{AX}	°F	45.6	51.9	60.8	72.4	79.7	87.9	93.9	93.0	85.0	74.9	60.2	50.3	71.3
	T_{AN}	°F	24.8	29.5	37.7	49.5	58.5	67.5	72.4	70.3	62.5	50.3	38.1	29.3	49.2
	I	Btu/ft²-d	732	978	1306	1603	1822	2021	2031	1865	1473	1164	827	659	1373
Astoria, OR	T_{AX}	°F	46.8	50.6	51.9	55.5	60.2	63.9	67.9	68.6	67.8	61.4	53.5	48.8	58.1
	T_{AN}	°F	35.4	37.1	36.9	39.7	44.1	49.2	52.2	52.6	49.2	44.3	39.7	37.3	43.1
	I	Btu/ft²-d	315	545	866	1253	1608	1626	1746	1499	1183	713	387	261	1000
Portland, OR	T_{AX}	°F	44.3	50.4	54.5	60.2	66.9	72.7	79.5	78.6	74.2	63.9	52.3	46.4	62.0
	T_{AN}	°F	33.5	36.0	37.4	40.6	46.4	52.2	55.8	55.8	51.1	44.6	38.6	35.4	44.0
	I	Btu/ft²-d	310	554	895	1308	1663	1773	2037	1674	1217	724	388	260	1067
Philadelphia, PA	T_{AX}	°F	38.6	41.1	50.5	63.2	73.0	81.7	86.1	84.6	77.8	66.5	54.5	43.0	63.4
	T_{AN}	°F	23.8	25.0	33.1	42.6	52.5	61.5	66.8	66.0	58.6	46.5	37.1	28.0	45.1
	I	Btu/ft²-d	555	795	1108	1434	1660	1811	1758	1575	1281	959	619	470	1169

7.8.1 USEPA TANKS 4.0 Calculation Output

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

Identification

User Identification:	C22001
City:	Clovis
State:	New Mexico
Company:	Cannon AFB
Type of Tank:	Horizontal Tank
Description:	Cannon Above Ground Storage Tank (Horizontal)

Tank Dimensions

Shell Length (ft):	20.00
Diameter (ft):	10.00
Volume (gallons):	12,000.00
Turnovers:	50.54
Net Throughput(gal/yr):	606,462.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Clayton, New Mexico (Avg Atmospheric Pressure = 12.73 psia)

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

C22001 - Horizontal Tank
Clovis, 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 (RVP 10)	All	55.35	48.42	62.28	53.12	4.7350	4.1217	5.4195	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
2,2,4-Trimethylpentane (isooctane)						0.5203	0.4227	0.6360	114.2300	1.6114	0.0071	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.0252	0.8396	1.2438	78.1100	0.7108	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.0922	0.0717	0.1175	106.1700	0.5976	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6933	1.4041	2.0299	86.1700	0.3879	0.0056	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene						0.0020	0.0015	0.0027	128.2000	0.0585	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.2852	0.2279	0.3543	92.1300	2.9147	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						6.3257	6.2884	6.2960	65.4367	-9.0209	0.9712	89.25	
Xylenes (mixed isomers)						0.0766	0.0595	0.0979	106.1700	3.7400	0.0024	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)

C22001 - Horizontal Tank
Clovis, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	1,910.6209
Vapor Space Volume (cu ft):	1,000.5072
Vapor Density (lb/cu ft):	0.0565
Vapor Space Expansion Factor:	0.2086
Vented Vapor Saturation Factor:	0.4435
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,000.5072
Tank Diameter (ft):	10.0000
Effective Diameter (ft):	15.9617
Vapor Space Outage (ft):	5.0000
Tank Shell Length (ft):	20.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0565
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Daily Avg. Liquid Surface Temp. (deg. R):	515.0231
Daily Average Ambient Temp. (deg. F):	53.1000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	512.7900
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,669.3333
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2086
Daily Vapor Temperature Range (deg. R):	27.7220
Daily Vapor Pressure Range (psia):	1.2978
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1217
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	5.4195
Daily Avg. Liquid Surface Temp. (deg R):	515.0231
Daily Min. Liquid Surface Temp. (deg R):	508.0926
Daily Max. Liquid Surface Temp. (deg R):	521.9536
Daily Ambient Temp. Range (deg. R):	27.4667
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4435
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.7350
Vapor Space Outage (ft):	5.0000
Working Losses (lb):	3,430.7337
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Annual Net Throughput (gal/yr.):	606,462.0000
Annual Turnovers:	50.5385
Turnover Factor:	0.7603
Tank Diameter (ft):	10.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	5,341.3545

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

Emissions Report for: Annual

C22001 - Horizontal Tank
Clovis, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	3,430.73	1,910.62	5,341.35
Benzene	21.20	11.81	33.01
Ethylbenzene	1.60	0.89	2.49
Hexane (-n)	19.11	10.64	29.75
Naphthalene	0.00	0.00	0.01
Toluene	24.19	13.47	37.66
2,2,4-Trimethylpentane (isooctane)	24.39	13.58	37.98
Xylenes (mixed isomers)	8.34	4.64	12.98
Unidentified Components	3,331.90	1,855.58	5,187.48

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

Identification

User Identification:	C22002
City:	Clovis
State:	New Mexico
Company:	Cannon AFB
Type of Tank:	Horizontal Tank
Description:	Cannon Above Ground Storage Tank (Horizontal)

Tank Dimensions

Shell Length (ft):	20.00
Diameter (ft):	10.00
Volume (gallons):	12,000.00
Turnovers:	50.54
Net Throughput(gal/yr):	606,462.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Clayton, New Mexico (Avg Atmospheric Pressure = 12.73 psia)

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

C22002 - Horizontal Tank
Clovis, 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 (RVP 10)	All	55.35	48.42	62.28	53.12	4.7350	4.1217	5.4195	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
2,2,4-Trimethylpentane (isooctane)						0.5203	0.4227	0.6360	114.2300	1.6114	0.0071	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.0252	0.8396	1.2438	78.1100	0.7108	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.0922	0.0717	0.1175	106.1700	0.5976	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.6933	1.4041	2.0299	86.1700	0.3879	0.0056	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene						0.0020	0.0015	0.0027	128.2000	0.0585	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.2852	0.2279	0.3543	92.1300	2.9147	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						6.3257	6.2884	6.2960	65.4367	-9.0209	0.9712	89.25	
Xylenes (mixed isomers)						0.0766	0.0595	0.0979	106.1700	3.7400	0.0024	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)

C22002 - Horizontal Tank
Clovis, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	1,910.6209
Vapor Space Volume (cu ft):	1,000.5072
Vapor Density (lb/cu ft):	0.0565
Vapor Space Expansion Factor:	0.2086
Vented Vapor Saturation Factor:	0.4435
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,000.5072
Tank Diameter (ft):	10.0000
Effective Diameter (ft):	15.9617
Vapor Space Outage (ft):	5.0000
Tank Shell Length (ft):	20.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0565
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Daily Avg. Liquid Surface Temp. (deg. R):	515.0231
Daily Average Ambient Temp. (deg. F):	53.1000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	512.7900
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,669.3333
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2086
Daily Vapor Temperature Range (deg. R):	27.7220
Daily Vapor Pressure Range (psia):	1.2978
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1217
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	5.4195
Daily Avg. Liquid Surface Temp. (deg R):	515.0231
Daily Min. Liquid Surface Temp. (deg R):	508.0926
Daily Max. Liquid Surface Temp. (deg R):	521.9536
Daily Ambient Temp. Range (deg. R):	27.4667
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4435
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.7350
Vapor Space Outage (ft):	5.0000
Working Losses (lb):	3,430.7337
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.7350
Annual Net Throughput (gal/yr.):	606,462.0000
Annual Turnovers:	50.5385
Turnover Factor:	0.7603
Tank Diameter (ft):	10.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	5,341.3545

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

Emissions Report for: Annual

C22002 - Horizontal Tank
Clovis, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	3,430.73	1,910.62	5,341.35
Benzene	21.20	11.81	33.01
Ethylbenzene	1.60	0.89	2.49
Hexane (-n)	19.11	10.64	29.75
Naphthalene	0.00	0.00	0.01
Toluene	24.19	13.47	37.66
2,2,4-Trimethylpentane (isooctane)	24.39	13.58	37.98
Xylenes (mixed isomers)	8.34	4.64	12.98
Unidentified Components	3,331.90	1,855.58	5,187.48

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

Identification

User Identification:	C22004
City:	Clovis
State:	New Mexico
Company:	Cannon AFB
Type of Tank:	Horizontal Tank
Description:	Cannon horizontal tank AAFES

Tank Dimensions

Shell Length (ft):	19.00
Diameter (ft):	9.50
Volume (gallons):	10,000.00
Turnovers:	365.00
Net Throughput(gal/yr):	3,650,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	Y

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Clayton, New Mexico (Avg Atmospheric Pressure = 12.73 psia)

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

C22004 - Horizontal Tank
Clovis, 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 (RVP 10)	All	52.54	52.54	52.54	52.10	4.4778	4.4778	4.4778	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
2,2,4-Trimethylpentane (isooctane)						0.4786	0.4786	0.4786	114.2300	1.6565	0.0071	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						0.9461	0.9461	0.9461	78.1100	0.7284	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.0833	0.0833	0.0833	106.1700	0.6251	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.5705	1.5705	1.5705	86.1700	0.3955	0.0056	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene						0.0018	0.0018	0.0018	128.2000	0.0630	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.2606	0.2606	0.2606	92.1300	3.0165	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						6.0646	6.0553	6.0646	65.4367	-9.4009	0.9712	89.09	
Xylenes (mixed isomers)						0.0692	0.0692	0.0692	106.1700	3.9160	0.0024	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)

C22004 - Horizontal Tank
Clovis, New Mexico

Annual Emission Calcaulations	
No Standing Losses: Underground Tank	
Working Losses (lb):	6,391.5140
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4778
Annual Net Throughput (gal/yr.):	3,650,000.0000
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Tank Diameter (ft):	9.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	6,391.5140

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

Emissions Report for: Annual

C22004 - Horizontal Tank
Clovis, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	6,391.51	0.00	6,391.51
Benzene	39.50	0.00	39.50
Ethylbenzene	2.98	0.00	2.98
Hexane (-n)	35.60	0.00	35.60
Naphthalene	0.01	0.00	0.01
Toluene	45.06	0.00	45.06
2,2,4-Trimethylpentane (isooctane)	45.44	0.00	45.44
Xylenes (mixed isomers)	15.53	0.00	15.53
Unidentified Components	6,207.39	0.00	6,207.39

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

Identification

User Identification:	C22005
City:	Clovis
State:	New Mexico
Company:	Cannon AFB
Type of Tank:	Horizontal Tank
Description:	Cannon under ground horizontal tank AAFES

Tank Dimensions

Shell Length (ft):	19.00
Diameter (ft):	9.50
Volume (gallons):	10,000.00
Turnovers:	182.50
Net Throughput(gal/yr):	1,825,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	Y

Paint Characteristics

Shell Color/Shade:	
Shell Condition	

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Clayton, New Mexico (Avg Atmospheric Pressure = 12.73 psia)

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

C22005 - Horizontal Tank
Clovis, 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 (RVP 10)	All	52.54	52.54	52.54	52.10	4.4778	4.4778	4.4778	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
2,2,4-Trimethylpentane (isooctane)						0.4786	0.4786	0.4786	114.2300	1.6565	0.0071	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						0.9461	0.9461	0.9461	78.1100	0.7284	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.0833	0.0833	0.0833	106.1700	0.6251	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.5705	1.5705	1.5705	86.1700	0.3955	0.0056	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene						0.0018	0.0018	0.0018	128.2000	0.0630	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.2606	0.2606	0.2606	92.1300	3.0165	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						6.0646	6.0553	6.0646	65.4367	-9.4009	0.9712	89.09	
Xylenes (mixed isomers)						0.0692	0.0692	0.0692	106.1700	3.9160	0.0024	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)

C22005 - Horizontal Tank
Clovis, New Mexico

Annual Emission Calcaulations

No Standing Losses: Underground Tank

Working Losses (lb):	4,251.2364
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4778
Annual Net Throughput (gal/yr.):	1,825,000.0000
Annual Turnovers:	182.5000
Turnover Factor:	0.3311
Tank Diameter (ft):	9.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	4,251.2364

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

Emissions Report for: Annual

C22005 - Horizontal Tank
Clovis, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	4,251.24	0.00	4,251.24
Benzene	26.27	0.00	26.27
Ethylbenzene	1.99	0.00	1.99
Hexane (-n)	23.68	0.00	23.68
Naphthalene	0.00	0.00	0.00
Toluene	29.97	0.00	29.97
2,2,4-Trimethylpentane (isooctane)	30.23	0.00	30.23
Xylenes (mixed isomers)	10.33	0.00	10.33
Unidentified Components	4,128.77	0.00	4,128.77

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

Identification

User Identification:	C22006
City:	Clovis
State:	New Mexico
Company:	Cannon AFB
Type of Tank:	Horizontal Tank
Description:	Cannon underground horizontal tanks AAFES

Tank Dimensions

Shell Length (ft):	19.00
Diameter (ft):	9.50
Volume (gallons):	10,000.00
Turnovers:	91.25
Net Throughput(gal/yr):	912,500.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	Y

Paint Characteristics

Shell Color/Shade:	
Shell Condition	

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Clayton, New Mexico (Avg Atmospheric Pressure = 12.73 psia)

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

C22006 - Horizontal Tank
Clovis, 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 (RVP 10)	All	52.54	52.54	52.54	52.10	4.4778	4.4778	4.4778	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
2,2,4-Trimethylpentane (isooctane)						0.4786	0.4786	0.4786	114.2300	1.6565	0.0071	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						0.9461	0.9461	0.9461	78.1100	0.7284	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.0833	0.0833	0.0833	106.1700	0.6251	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						1.5705	1.5705	1.5705	86.1700	0.3955	0.0056	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene						0.0018	0.0018	0.0018	128.2000	0.0630	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.2606	0.2606	0.2606	92.1300	3.0165	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						6.0646	6.0553	6.0646	65.4367	-9.4009	0.9712	89.09	
Xylenes (mixed isomers)						0.0692	0.0692	0.0692	106.1700	3.9160	0.0024	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)

C22006 - Horizontal Tank
Clovis, New Mexico

Annual Emission Calcaulations

No Standing Losses: Underground Tank

Working Losses (lb):	3,181.0976
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.4778
Annual Net Throughput (gal/yr.):	912,500.0000
Annual Turnovers:	91.2500
Turnover Factor:	0.4954
Tank Diameter (ft):	9.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	3,181.0976

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

Emissions Report for: Annual

C22006 - Horizontal Tank
Clovis, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	3,181.10	0.00	3,181.10
Benzene	19.66	0.00	19.66
Ethylbenzene	1.49	0.00	1.49
Hexane (-n)	17.72	0.00	17.72
Naphthalene	0.00	0.00	0.00
Toluene	22.43	0.00	22.43
2,2,4-Trimethylpentane (isooctane)	22.62	0.00	22.62
Xylenes (mixed isomers)	7.73	0.00	7.73
Unidentified Components	3,089.46	0.00	3,089.46

TANKS 4.0.9d
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification				Losses (lbs)
C22001	Cannon AFB	Horizontal Tank	Clovis, New Mexico	5,341.35
C22002	Cannon AFB	Horizontal Tank	Clovis, New Mexico	5,341.35
C22004	Cannon AFB	Horizontal Tank	Clovis, New Mexico	6,391.51
C22005	Cannon AFB	Horizontal Tank	Clovis, New Mexico	4,251.24
C22006	Cannon AFB	Horizontal Tank	Clovis, New Mexico	3,181.10
Total Emissions for all Tanks:				24,506.56

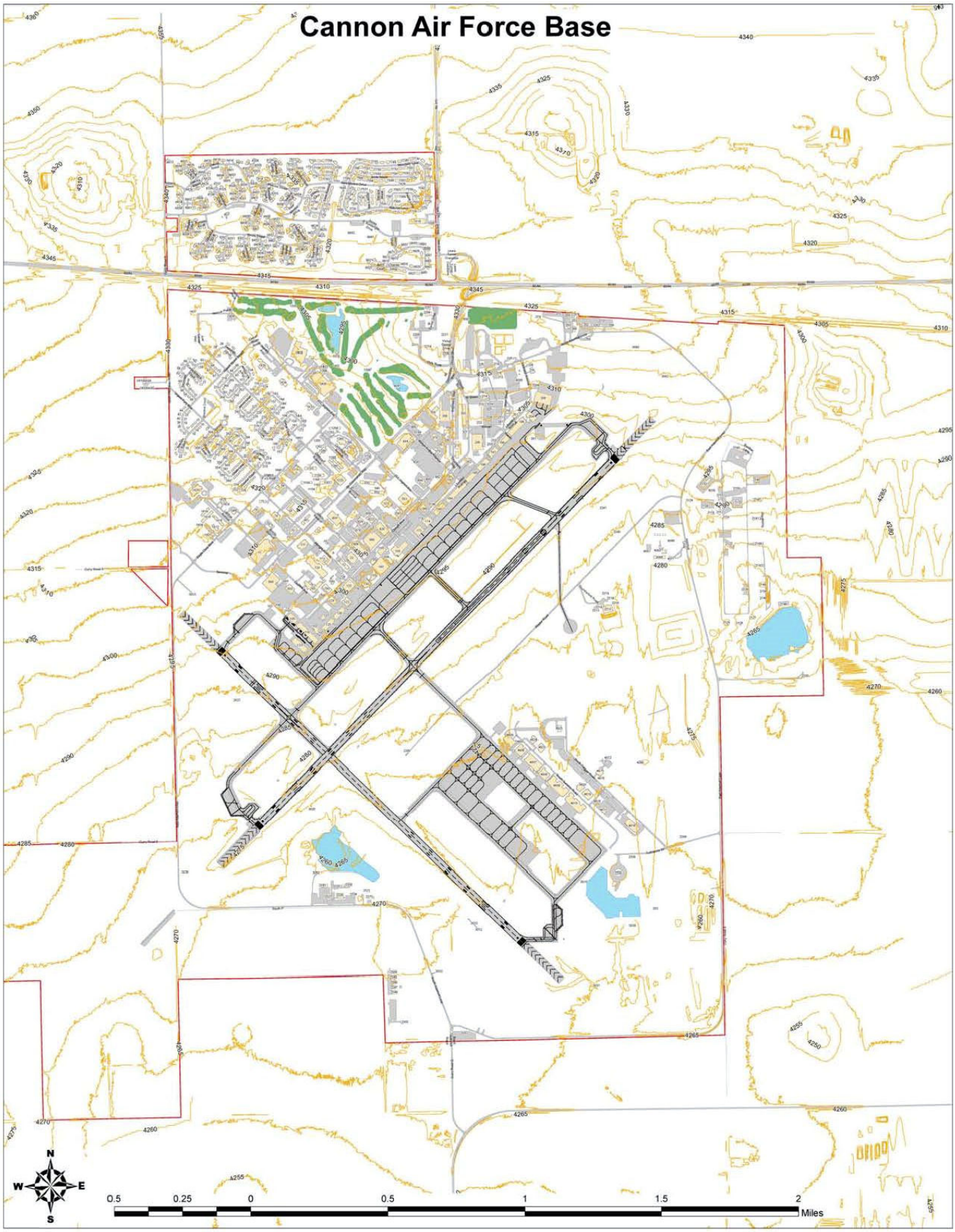
Section 8

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	

See the map on the following page.


Cannon Air Force Base
N
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Miles

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.

Proof of public notice by the applicant is required for permit applications submitted under 20.2.72 or 20.2.74 NMAC. Cannon AFB is submitting this application under 20.2.70 NMAC; therefore, this section was not required.

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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.

10.1 External Combustion

External combustion systems burn a fuel and transfer the heat of combustion to a working fluid that, typically, does not come into direct contact with the combustion products. The most common types of external combustion systems are water heaters, boilers, and forced air furnaces. External combustion systems have been designed to burn all types of fuels; typical sizes range from less than 100,000 Btu/hour to hundreds of million Btu/hour.

Cannon AFB uses external combustion systems primarily to provide space heat, and to produce hot water for individual buildings throughout the Base. A small subset of heaters are used in conjunction with the paint spray booths to facilitate the paint drying/curing process. The combustion units vary in heat input capacity from about 40,000 Btu/hour to 5 million Btu/hour. The Cannon AFB external combustion systems are all fueled by pipeline natural gas. This permit application also reflects the removal of four (4) previously permitted heaters (EU 14001 – 14004) that ranged from 8.25 to 8.628 MMBtu/hr.

The AQB List of Insignificant Activities specifies that liquid fuel-fired boilers with a heat input capacity less than or equal to 1 million Btu/hour and gas-fired boilers with a heat input capacity less than or equal to 5 million Btu/hour are not subject to the 20.2.70 NMAC permitting requirements provided that they are used solely for heating buildings for personal comfort or for producing hot water for personal use. Seven of Cannon AFB's external combustion systems do not meet the insignificant activity definition; these systems are listed in Table 10-1. The remaining external combustion systems (approximately 600) at Cannon AFB are smaller systems with heat input capacities, fuel types, and functions that satisfy the criteria for insignificance.

The insignificant boilers/heaters are not permitted sources under 20.2.70 NMAC or 20.2.72 NMAC and are not addressed further in this application. Emissions from these units were included in the original

Title V permit application when assessing whether Cannon AFB would be a major source with respect to PSD, Title III, and Title V. Emissions from these units are not included in Cannon AFB's semiannual emission reports to the AQB. New units that are subject to the requirements of 20.2.72 NMAC will be permitted prior to installation.

Table 10-1
Nonexempt External Combustion Sources at Cannon AFB

Source Number	Building	Fuel Type	Heat Input Capacity (10^6 Btu/hr)
14007	4607	Natural Gas	5.0
14008	4607	Natural Gas	5.0
14009	4607	Natural Gas	5.0
14010	4608	Natural Gas	0.31
14011	4608	Natural Gas	0.525
14012	4607	Natural Gas	2.00
14013	4608	Natural Gas	0.31
14014	375	Natural Gas	1.03

Design Capacity/Maximum Operating Schedule. The design capacities of the nonexempt external combustion systems at Cannon AFB are listed in Table 10-1. Emissions from these systems occur continuously when the boiler is being operated. The maximum natural gas consumption associated with these systems is164.68 million scf/yr. The process heaters at buildings 375 and 4607 are necessary to achieve the temperatures required for curing paints used for aircraft parts and comfort heating. The maximum operating schedule for these process heaters are limited by the number of painters available and curing time; the estimated maximum operating schedule is 12 hours per day, 3 days per week, and 52 weeks per year. Cannon AFB has chosen to base allowable emissions on continuous operation (8,760 hours/year) for all permitted external combustion systems.

Actual Operating Schedule. The nonexempt boilers and heaters are used in paint booth operations and to provide building heat. During the period in which the boilers are operating as comfort heat, they are switched on and off automatically by a load demand sensor (e.g., a thermostat).

Control and Monitoring Equipment. The external combustion sources at Cannon AFB are not equipped with emissions control or monitoring equipment; no applicable requirements mandate the use of such equipment.

10.2 Fuel Dispensing

Fuel dispensing is the act of transferring liquid fuel from a fixed or mobile storage tank to an end use (i.e., a vehicle or equipment fuel tank). Emissions occur because of fuel vapor displacement when the equipment/vehicle fuel tank is filled and because of fuel spillage.

Fuel dispensing at Cannon AFB consists of dispensing gasoline, jet fuel, and diesel fuel into equipment and vehicles for use at Cannon AFB. Because jet fuel and diesel fuel have vapor pressures below 10 mm Hg, dispensing of these fuels is defined as an insignificant activity by the AQB and thus they are not addressed in this renewal.

Gasoline dispensing operations to motor vehicles are currently conducted at two locations at Cannon AFB: the Special Operations Logistics Readiness Squadron (SOLRS) (EU ID 15001), and AAFES service station (EU ID 15003). Other gasoline dispensing operations may take place when refueler trucks transfer fuel to equipment at remote locations. Emissions from new exempt or insignificant units are not included in Cannon AFB's semiannual emission report to the AQB. A previously permitted fuel dispensing operation at the Grounds and Maintenance yard (EU ID 15002) has been discontinued and the associated storage tank removed.

Cannon AFB has established throughput limits of 1,212,924 gallons of motor vehicle gasoline per year for EU ID 15001, and 6,387,500 gallons of motor vehicle gasoline per year for EU ID 15003. These limits are consistent with the NSR Permit (Permit No. 1517M5R1) and Cannon AFB requests that these limits remain unchanged.

Design Capacity/Maximum Operating Schedule. Gasoline dispensing operations occur whenever operations at Cannon AFB are ongoing. To maintain maximum flexibility, it is assumed that gasoline dispensing may occur any time, 24 hours per day, 7 days per week, and 52 weeks per year. The design capacity of fuel dispensing operations is difficult to define. In general, each fuel dispensing nozzle can dispense approximately 10 gallons of gasoline per minute; however, the process capacity is limited by the requirement to move vehicles to and away from the dispenser and to prepare them for fueling.

Actual Operating Schedule. Cannon AFB's normal operating hours for government vehicle fuel dispensing (EU ID 15001) is 23 hours per day, 7 days per week. The government fueling operation is unavailable for one hour per day to reconcile fuel records (receipt and issues). The AAFES service station (EU ID 15003) is open 24 hours, 7 days per week, and is used to fuel personal/privately owned vehicles.

Control and Monitoring Equipment. The AAFES service station (EU ID 15001) is equipped with a vapor balance system meeting the requirements of 40 CFR 63.11118(b) – National Emission Standards for Hazardous Air Pollutants at Gasoline Dispensing Facilities. The remaining fuel dispensing operations at Cannon AFB are not equipped with emissions control or monitoring equipment; no applicable requirements mandate the use of such equipment.

10.3 Gasoline Fuel Distribution

Cannon AFB has a small gasoline distribution operation located at the POL yard (EU ID 16001). A small portion of the gasoline stored in the 12,000-gallon tank (EU ID 22002) that is currently associated with government vehicle fueling station (EU ID 15001) is also loaded into cargo trucks. The cargo truck then distributes the fuel to various locations, including an off-site 1,000-gallon storage tank associated with vehicle refueling. The gasoline is bottom loaded into the cargo truck. The 12,000 gallon storage tank and its associated fuel dispensing activity is subject to and complies with 40 CFR Part 63 Subpart CCCCCC. The actual and potential VOC emissions from the gasoline distribution activity are small (<0.1 tpy). The gasoline distribution activity is being included as an emission unit in the application because of the applicability of 40 CFR Part 63 Subpart BBBBBB.

Cannon AFB has requested throughput limit of 65,000 gallons of gasoline per year for EU ID 16001. This limit was established in an NSR Administrative Amendment (1517M5R14) approved On July 20, 2022.

Design Capacity/Maximum Operating Schedule. The fuel gasoline distribution operation occurs on an as needed basis. To maintain maximum flexibility, it is assumed that loading operations could occur any time, 24 hours per day, 7 days per week, 52 weeks per year, however they typically occur during normal working hours (6:00 am to 5:00 pm, 5 days per week).

Actual Operating Schedule. Cannon AFB's normal operating hours are currently approximately 6 a.m. to 5 p.m., 5 days per week. Exact hours cannot be specified because different organizations at Cannon AFB operate on different schedules. Occasionally, project demands result in operations at other hours of the day or night and on weekends. However, the filling of the cargo truck with gasoline is a relatively rare occurrence. It typically occurs no more than two or three times a month and occasionally there are months when no gasoline is loaded and distributed.

Control and Monitoring Equipment. The gasoline distribution operations at Cannon AFB is not equipped with emissions control or monitoring equipment. No applicable requirements dictate the use of such equipment.

10.4 Internal Combustion Engines

Cannon AFB operates two different groups of internal combustion engines (ICE): fire pump engines and engines associated with emergency generators. All the engines operate on diesel fuel. This equipment is subject to either the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ) or the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60 Subpart IIII). Even though this equipment complies with a definition from either the September 15, 2008 List of Trivial Activities or the March 24, 2005 List of Insignificant Activities, any activity for which applicable requirements apply is not trivial or insignificant, regardless of whether the activity meets the criteria in one of the above mentioned lists. Following are the descriptions of each group of internal combustion emergency activities.

Cannon AFB operates eighteen permitted fire pump engines, designated EU ID 19001 to 19010, and EU 19013 to 19020. The permitted fire pump engines that are subject to 40 CFR 60 Subpart IIII are EU IDs 19004, 19005, 19006, 19010, 19016-19020. The fire pump engines subject to 40 CFR Part 63 Subpart ZZZZ are 19001, 19002, 19003, 19007, 19008, 19009, 19013,19014, and 19015. Cannon AFB has included in its permit five placeholders that serve for replacement units for the current permitted fire pump engines or for new fire pump engines. These placeholders are designated EU IDs 19021 through 19025.

Cannon AFB operates fifty-one permitted emergency generators that provide back-up power to buildings and mission, security, and safety essential equipment during power outages. There are seven permitted

emergency generators that are subject to 40 CFR 63 Subpart ZZZZ. They are EU 19304, 19316, 19339, 19344, 19345, 19357, and 19363. The remainder of the emergency generators are subject to 40 CFR 60 Subpart IIII.

Cannon AFB has included in its permit ten placeholders that serve as replacement units for the current permitted emergency generators. These placeholders are designated EU IDs 19370 through 19379.

In addition, internal combustion engines can be portable or stationary. In accordance with the AQB 24 March 2005 List of Insignificant Activities, the following portable engines are considered insignificant sources and do not need to be permitted under 20.2.70 NMAC:

- Diesel and natural gas engines ≤ 200 horsepower (hp);
- Gasoline engines ≤ 500 hp;
- JP-4 or JP-8/Jet A engines ≤ 650 hp; and
- Natural gas turbines ≤ 1,500 hp.

Furthermore, all portable emergency generators are exempt if they comply with the definition of standby equipment. Cannon AFB operates a significant number of portable engines, all of which meet these exemption requirements.

Design Capacity/Maximum Operating Schedule. The fire pump engines and emergency generators range in power size (27 to 1214 hp) and may be operated 24 hours per day, 7 days per week.

Actual Operating Schedule. Actual operating hours for the fire pump engines and emergency generators are less than the design capacity and depend on the workload and power grid reliability. These engines are only operated for maintenance purposes and during emergencies. The fire pump engines and emergency generators do not operate more than 500 hours per engine and are limited to no more than 100 hours per engine for maintenance and testing purposes.

Control and Monitoring Equipment. The internal combustion engines operated at Cannon AFB are not equipped with emissions control or monitoring equipment. No applicable requirements mandate the use of such equipment.

10.5 Miscellaneous Chemical Use

Various organizations at Cannon AFB use solvents, paints and other chemicals for a variety of purposes, and many of these materials may contain VOCs and/or HAPs. Those chemical uses that are not accounted for elsewhere in the permit (e.g., solvents and paints used in paint booths) are considered miscellaneous chemical use. The chemicals may be used for facility maintenance and mission-related purposes in both enclosed and unenclosed areas. For example, solvents are used for surface cleaning and other chemicals are used for preparing aircraft parts for painting. Most individual uses are small and miscellaneous chemical use is conducted by almost every organization at Cannon AFB.

There is no physical limitation on the quantity of miscellaneous chemical use that could occur. Since most (if not all) of the miscellaneous chemical use does not occur within specific equipment, there is no design capacity. Similarly, there is no set operating schedule for miscellaneous chemical use. To maintain maximum operating flexibility, it is assumed that miscellaneous chemical use could occur any time, 24 hours per day, 7 days per week, 52 weeks per year. However, most miscellaneous chemical use occurs in very discrete events, as opposed to continuous uses. No applicable requirements necessitate any specific emission limits for miscellaneous chemical use. All VOCs and HAPs contained in the miscellaneous chemicals are assumed to be emitted.

10.6 Surface Coating – Paint Booths

Surface coating operations involve the application of protective coatings (e.g., primers, sealers, stains, topcoats) to various types of surfaces to improve their durability and/or appearance. Surface coatings can be applied by brushing, rolling, or spraying the coating on to the surface, or by immersing the surface in the coating. Spray application of coatings is the most common method used in industrial settings; this can involve spraying from an aerosol can, use of a conventional air atomized spray rig, or use of more advanced spray equipment (e.g., HVLP, airless, or air-assisted airless) designed to reduce the amount of paint required to coat a surface by reducing the amount of overspray (i.e., coating material that misses or bounces off the surface).

Coating operations can be conducted in a paint booth or can be unenclosed. Paint booths provide a better environment for painting by isolating the activity from wind, dust, and other external effects. Paint

booths are typically equipped with filters for particulate matter control. Emissions from surface coating include the VOCs and HAPs in the solvents that are part of the coatings (and the solvents used for thinning and for cleanup) and PM emissions from overspray.

Cannon AFB conducts surface coating operations for mission support activities within its three existing paint booths designated EU IDs 21003, 21005, and 21006. Mission support activities primarily involve touch up painting for aircraft and the painting of aircraft and vehicle parts. Cannon AFB's surface coating operations are listed in Table 10-2 and are covered by NSR Permit No. 1517M5R1; all of the paint booths are equipped with particulate control filters.

Table 10-2
Paint Booth Information

Source ID	Location	Type of Control	Control Efficiency (%)
21003	Bldg. 375	Particulate Filter	87.5
21005	Bldg. 4607	Particulate Filter	99.4
21006	Bldg. 4607	Particulate Filter	85.6

Cannon AFB's basewide allowable emission limit for VOCs and HAPs are based on usage limits established in Cannon's NSR Permit. Cannon AFB tracks paint booth use and emissions through the use of paint booth operating logs. Cannon AFB will permit any new paint booths or changes to the current paint booth operations in accordance with the requirements of 20.2.72 NMAC.

Design Capacity/Maximum Operating Schedule. The design capacity of Cannon AFB's paint booth surface coating operations is dependent on the design capacity of the paint application device (e.g., HVLP gun, sprayer). To maintain maximum operating flexibility, it is assumed that surface coating operations can be conducted any time, 24 hours per day, 7 days per week, and 52 weeks per year.

Actual Operating Schedule. Surface coating operations at Cannon AFB are typically performed for several hours a day a few times per week. Most surface coating occurs during Cannon AFB's regular operating hours, approximately 6 a.m. to 5 p.m., 5 days per week.

Control and Monitoring Equipment. The enclosed surface coating operations conducted within a paint booth are equipped with fabric filters to control emissions of PM. The control efficiency for each booth is listed in Table 10-2 above. Each paint booth is equipped with a device to measure pressure drop across the filters (manometer) on the paint booth exhaust. Filters are replaced when the pressure drop reaches the individual level set for each booth; these values are based on the acceptable operating range specified by the manufacturer of the filter material.

10.7 Storage Tanks

Fuels are routinely stored in steel or fiberglass tanks that can be either above or below the earth's surface. Aboveground tanks can have fixed dimensions (fixed roof tanks) or can have a roof that floats on or above the liquid surface (internal or external floating roof tanks). Emissions from storage tanks occur when liquid is pumped into the tank due to vapor displacement and when diurnal temperature changes cause the tanks to "breathe."

Cannon AFB stores gasoline, jet fuel, and diesel fuel in storage tanks. Most of the tanks at Cannon AFB are aboveground, fixed roof tanks. Because jet fuel and diesel fuel have vapor pressures below 10 mm Hg, storage of these fuels is defined as an insignificant activity by the AQB. Gasoline tanks smaller than 1,000-gallon capacity used for fleet vehicle refueling are defined as an insignificant activity by the AQB. The remainder of this section addresses only gasoline storage tanks.

Cannon AFB operates five nonexempt gasoline storage tanks used to support mission activities and to provide services to enlisted and civilian personnel at the base. These tanks are located at the POL yard (EU IDs 22001 and 22002), and the AAFES service station (EU ID 22004, 22005 and 22006). The gasoline storage tank that was utilized by grounds maintenance (EU ID 22003) has been removed and thus is not included in this application.

Design Capacity/Maximum Operating Schedule. There are two components of design capacity that impact emissions from fuel storage tanks: the storage capacity of the tank and the fuel throughput. The storage capacity of each tank sets the upper limit on the vapor space volume, which is a major factor in the standing/breathing storage loss portion of storage tank emissions. The fuel throughput is the primary determining factor in the working loss portion of storage tank emissions. Standing storage losses occur as the ambient temperature changes. Working losses occur when fuel is added to the tank.

To maintain maximum operating flexibility, it is assumed that storage tanks can be filled any time, 24 hours per day, and 365 days per year.

Actual Operating Schedule. Filling the gasoline storage tanks typically occurs only during Cannon AFB's normal operating hours, approximately 6 a.m. to 5 p.m. Tanks themselves are in operation 24 hours a day, 7 days per week, and 365 days per year.

Control and Monitoring Equipment. The AAFES service station tanks (EU IDs 22004, 2205 and 22006) are equipped with a vapor balance system, meeting the requirements of 40 CFR 63.11118(b) – National Emission Standards for Hazardous Air Pollutants at Gasoline Dispensing Facilities. The remaining gasoline storage tanks are not equipped with emissions control or monitoring equipment. No applicable requirements dictate the use of such equipment.

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)**:**

The equipment operated and the activities conducted within the Cannon AFB facility boundary were evaluated for this Title V Permit Renewal Application. The types of equipment evaluated fall into the following source categories:

- External Combustion (natural gas heaters and boilers)
- Fuel Dispensing (civilian and government gasoline dispensing)
- Gasoline Fuel Distribution
- Internal Combustion (emergency diesel engines and diesel fire pump engines)
- Surface Coating (paint booths)
- Fuel Storage Tanks (aboveground and underground gasoline storage)
- Miscellaneous Chemical Use

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 not one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions for this modification are not significant as presented in the list below. The proposed updates contained in this permit renewal application result in emission reductions for most pollutants. The "project" emissions listed below only result from changes described in this permit application, thus no emissions from other revisions or modifications, past or future, apply to this evaluation. This project does not result in "de-bottlenecking.", or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows:

a. **NOx: 103.0 TPY (-28.5 tpy)**
b. **CO: 57.4 TPY (-15 tpy)**
c. **VOC: 98.4 TPY +0.8 tpy)**
d. **SOx: 9.8 TPY (+0.5 tpy)**
e. **TSP (PM): 6.1 TPY (-2.9 tpy)**
f. **PM10: 6.1 TPY (-1.6 tpy)**
g. **PM2.5: 5.7 TPY (-1.6 tpy)**
h. **Fluorides: TPY (no change)**
i. **Lead: TPY (no change)**
j. **Sulfur compounds (listed in Table 2): TPY (no change)**
k. **GHG: 19,407 TPY**

C. Netting is not required for this renewal.

D. BACT is not required for this renewal.

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.

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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:
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Title V permit applications. It establishes procedures for protecting confidential information, procedures for seeking a variance, NMAQB's authority to require sampling equipment, severability, and the effective date for conformance with the NMACs, and prohibits the violation of other requirements in attempting to comply with the NMACs. Although this regulation is applicable, it does not impose any specific requirements.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	No	Facility	The requirements of this part are not applicable to 20.2.70 NMAC (Operating Permit). See exemption at 20.2.3.9 NMAC.
20.2.5 NMAC	Source Surveillance	No	Facility	N/A - No requirements
20.2.7 NMAC	Excess Emissions	Yes	Facility	Permit conditions establish that Cannon AFB and individual emission units are subject to emissions limits. 20.2.7 NMAC, prohibits excess emissions unless proper notification procedures are followed.
20.2.8 NMAC	Emissions Leaving New Mexico	Yes	Facility	This regulation is applicable because it establishes prohibitions on the release of pollutants that cross New Mexico State boundaries. Cannon AFB dispersion modeling for their NSR Permit indicate emissions do not exceed NAAQS.
20.2.10 NMAC	Woodwaste Burners - Opacity	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.11 NMAC	Asphalt Plant – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.12 NMAC	Cement Kilns – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.13 NMAC	Gypsum Plants – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.14 NMAC	Coal Burning Equipment – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.15 NMAC	Pumice, Mica, Purlite Equipment – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.16 NMAC	Nonferrous Smelters – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.17 NMAC	Nonferrous Smelters – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.18 NMAC	Oil Burning Equipment – Particulate Matter	No	-	N/A – Cannon AFB has no oil-fired boilers with a heat input of greater than 10.0 MMBtu/hr. As per 20.2.18.109 and 110 the rule standards are applicable to oil burning units having a rated heat capacity greater than 250 MMBtu/hr
20.2.19 NMAC	Potash, Salt Process Equipment – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.20 NMAC	Lime Manufacturing – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.21 NMAC	Nonferrous Smelters – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.22 NMAC	Roads – Town of Hurley – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.23 NMAC	Fugitive Dust Control	No	-	Cannon AFB is not one of the fugitive dust sources listed at 20.2.23.108.A NMAC, and the facility is not located in an area subject to a mitigation plan pursuant to 40 CFR 51.930.
20.2.30 NMAC	Kraft Mills – Total Reduced Sulfur	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.31 NMAC	Coal Burning Equipment – Sulfur Dioxide	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.32 NMAC	Coal Burning Equipment - Nitrogen Dioxide	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	-	N/A – Cannon AFB does not have any gas burning equipment with a heat input of greater than 1,000,000 million British Thermal Units per year per unit. As per 20.2.33.108, the cited standards are applicable to gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per unit.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	-	N/A – Cannon AFB does not have any gas burning equipment with a heat input of greater than 1,000,000 million British Thermal Units per year per unit. As per 20.2.34.108, the cited standards are applicable to gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per unit.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.36 NMAC	Petroleum Processing – Sulfur	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.37 NMAC	Petroleum Processing Facilities	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.38 NMAC	Hydrocarbon Storage Facilities	No	-	N/A – Cannon AFB has no affected facilities/emission units.

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.39 NMAC	Hydrocarbon Storage Facilities	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.40 NMAC	Sulfur Acid Production Unit – Sulfur Dioxide	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.41 NMAC	Nonferrous Smelter - Sulfur	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.42 NMAC	Coal Mining and Preparation – Particulate Matter	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.43 NMAC	Gasification Plant	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.60 NMAC	Open Burning	Yes	Facility	Cannon AFB may occasionally burn wood pallets for fire training exercises. NMED is notified prior to burning (20.2.60.112 NMAC)
20.2.61 NMAC	Smoke & Visible Emissions	Yes	14007-14014, 19001-19020 and 19301-19369	Listed emission units are Stationary Combustion Equipment that are not exempted by the rule. This regulation that limits opacity to 20%which applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless that equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC).
20.2.62 NMAC	Municipal Waste Combustors	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.63 NMAC	Biomed Waste Combustors	No	-	N/A – Cannon AFB has no affected facilities/emission units.
20.2.65 NMAC	Open Burning – Smoke and Visible Emissions	No	-	Cannon AFB does not conduct prescribed burns that exceed the burn area/volume criteria specified in 20.2.65.100, 20.2.65.10NMAC2, and 20.2.65.103
20.2.70 NMAC	Operating Permits	Yes	Facility	Cannon AFB is submitting this application in accordance with this regulation as a Title V source. Cannon AFB has the potential to emit (PTE) more than 100 tpy of NOx.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	As a major source under 20.2.70 NMAC, Cannon AFB is subject to 20.2.71 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation is applicable because the facility has potential emission rates (PER) greater than 10 pph or 25 tpy for pollutants subject to a state or federal ambient air quality standards (does not include VOCs or HAPs).
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	**NOI:** 20.2.73.200 NMAC does not apply. Cannon AFB is subject to both 20.2.72 and 20.2.70 NMAC. **Emissions Inventory Reporting:** 20.2.73.300 NMAC applies. All Title V major sources and facilities issued a Construction Permit meet the applicability requirements of 20.2.73.300 NMAC. All facilities that are a Title V Major Source as defined at 20.2.70.7.R NMAC, are subject to Emissions Inventory Reporting.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	-	Cannon AFB is considered a PSD Minor source and does not have the potential to emit more than 250 tpy of NOx. Cannon AFB does not qualify as one of the stationary sources listed in Table 1 of 20.2.74.501 NMAC that emits, or has the potential to emit, emissions equal to or greater than one hundred (100) tons per year.

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	No Requirements: Although this regulation may apply, it does not impose any specific requirements on the operation of the facility.
20.2.77 NMAC	New Source Performance	Yes	19004-19006, 19010, 19016-19020, 19301-19303, 19305-19315, 19317-19326, 19331-19335, 19338, 19340-19343, 19347, 19356, 19358, 19359, 19361, 19362, 19364-19369	This source has Stationary Compression Ignition Internal Combustion Engines, which are subject to the requirements of 40 CFR Part 60 Subpart IIII General Requirements and Paragraph 60.4205 (a) and (c).
20.2.78 NMAC	Emission Standards for HAPS	No	-	Cannon AFB emits hazardous air pollutants but has no facilities/emission units subject to the requirements of 40 CFR Part 61 thus 20.2.78 NMAC is not applicable.
20.2.79 NMAC	Permits – Nonattainment Areas	No	-	This regulation is not applicable because Cannon AFB is neither located in nor has a significant impact on a nonattainment area (see 20.2.79.6 NMAC).
20.2.80 NMAC	Stack Heights	No	-	N/A – Not listed as applicable in Permit NSR 1517M5, This regulation is not applicable because it establishes guidelines for the selection of an appropriate stack height for the purpose of atmospheric dispersion modeling (see 20.2.80.6 NMAC); however, it only imposes requirements when modeling is required as a part of the application. This application does not require modeling.
20.2.81 NMAC	Western Backstop Sulfur Dioxide Trading Program	No	-	N/A – Cannon AFB actual SO_2 emissions are below the applicable 100 tpy threshold (20.2.81.101).
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	*Units Subject to 40 CFR 63* *Subpart: CCCCCC* 22001, 22002, 22004, 22005, 22006 *Subpart BBBBBB:* 16001 *Subpart ZZZZ* 19001-19003, 19007-19009, 19013-19015, 19304, 19316, 19339, 19344, 19345, 19357, 19363	In this application, Cannon AFB is requesting limits of 9.9 tpy of each individual HAP and 24.9 tpy of all HAPs combined. Therefore, Cannon AFB is an area source with respect to the NESHAP standards. Cannon AFB is subject to any applicable Area Source standards for HAPs. Cannon AFB is a stationary source that has: 1) Stationary Reciprocating Internal Combustion Engines (RICE) subject to 40 CFR Part 63 Subpart ZZZZ 2) Gasoline Dispensing Facilities & Associated Gasoline Storage Tanks subject to 40 CFR Part 63 Subpart CCCCCC 3) Gasoline Distribution & Associated Storage Tank subject to the requirements of 40 CFR Part 63 Subpart BBBBBB
20.2.84 NMAC	Acid Rain Permits	No	-	N/A – Cannon AFB has no affected facilities/emission units.

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.87 NMAC	Greenhouse Gas Reporting [REPEALED]	No	-	N/A – This rule has been repealed.
20.2.98 NMAC	Conformity of General Federal Actions to the SIP	No	-	N/A – This rule has been repealed.
20.2.99 NMAC	Conformity to the SIP of Transportation Plans, Programs, and Projects	No	-	N/A – Cannon AFB is in an attainment area.

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	Cannon AFB facility is subject to 40 CFR 50. Defined as applicable at 20.2.70.7.E.11, Any national ambient air quality standard. Applies to all permitted sources in the state of New Mexico.
40 CFR 52	Approval and Promulgation of Implementation Plans	No	-	40 CFR 52.21 Prevention of Significant Deterioration of Air Quality is not applicable to Cannon AFB because the facility is not a major PSD source. The remainder of 40 CFR 52 1s not applicable because it addresses approval and promulgation of implementation plans.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	See entries later in this table for emission units subject 40 CFR 60 Subpart IIII	Applies because other Subparts in 40 CFR 60 apply. Cannon AFB has emission units subject 40 CFR 60 subpart IIII.
NSPS 40 CFR 60, Subpart Cc	Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills	No	-	N/A – Cannon AFB does not have a solid municipal waste landfill.
NSPS 40 CFR 60, Subpart Cd	Emission Guidelines and Compliance Times for Sulfuric Acid Production Plants	No	-	N/A – Cannon AFB does not have any sulfuric acid production units.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart Ce	Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators	No	-	N/A – Cannon AFB does not have any hospital, medical, or infectious waste incinerators.
NSPS 40 CFR 60, Subpart D	Standards of Performance for Fossil Fuel Fired Steam Generators	No	-	N/A – Cannon AFB does not have steam generators with a heat output capacity greater than 250 million British Thermal Units per hour (40 CFR 60.40(a)(1)).
NSPS 40 CFR 60, Subpart Da	Standards of Performance For Electric Utility Steam Generating Units	No	-	N/A – Cannon AFB has no electric utility steam generating units.
NSPS 40 CFR 60, Subpart Db	Performance Standards for Industrial-Commercial-Institutional Steam Generating Units >100 million Btu/hr	No	-	N/A – Cannon AFB has no affected steam generating units.
NSPS 40 CFR 60.40c Subpart Dc	Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units 10 to 100 million Btu/hr	No	-	N/A – Cannon AFB has no steam generating units with a design heat capacity between 100 and 10 MMBtu/hr (40 CFR 60.40c(a)).
NSPS 40 CFR60, Subpart E	Standards of Performance for Incinerators	No	-	N/A – Cannon AFB has no incinerators.
NSPS 40 CFR60, Subpart Ea & Eb	Standards of Performance for Municipal Waste Combustors	No	-	N/A – Cannon AFB has no municipal waste combustors.
NSPS 40 CFR 60, Subpart Ec	Standards of Performance for Hospital/Medical/ Infectious Waste Incinerators constructed. after 6/20/1996	No	-	N/A – Cannon AFB has no hospital/medical/infectious waste incinerators.
NSPS 40 CFR 60, Subpart F	Standards of Performance for Portland Cement Plants	No	-	N/A – Cannon AFB does not operate a cement plant.
NSPS 40 CFR 60, Subpart I	Standards of Performance for Hot Mix Asphalt Facilities	No	-	N/A – Cannon AFB does not operate hot mix asphalt facility.
NSPS 40 CFR 60, Subpart K	Standards of Performance for Storage Vessels for Petroleum Liquids constructed after 6/11/1973 and prior to 5/19/1978	No	-	N/A – Cannon AFB does not have an affected facility (40 CFR 60.110(a)(2).

FEDERAL REGULATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
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	No	-	Cannon AFB does not have an affected facility as cited in 40 CFR 60.110a. Cannon AFB does not own or operate any storage vessels for petroleum liquids that were constructed, reconstructed or modified between May 18, 1978, and July 23, 1984.
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	No	-	N/A – Cannon AFB has no affected facilities. The Standard was modified on 15 October 2003 and there are no longer any applicable requirements for storage vessels handling liquid with a vapor pressure < 0.51 psia (3.5kPa) (40 CFR 60.110b(b)).
NSPS 40 CFR 60, Subpart L	Standards of Performance for Secondary Lead Smelters	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart M	Standards of Performance for Secondary Brass and Bronze Production Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart N	Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces constructed on or after 6/11/1973	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart Na	Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces constructed after 1/20/1983	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart O	Standards of Performance for Sewage Treatment Plants	No	-	N/A – Wastewater treatment plant at Cannon AFB does not utilize an incinerator. (40 CFR 60.150(a)).
NSPS 40 CFR 60, Subpart P	Standards of Performance for Primary Copper Smelter Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart Q	Standards of Performance for Primary Zinc Smelters	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart R	Standards of Performance for Primary Lead Smelters	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart S	Standards of Performance for Primary Aluminum Reduction Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart T	Standards of Performance for Primary Aluminum Reduction Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart U - X	Standards of Performance for the Phosphate Fertilizer Industry	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart Y	Standards of Performance for Coal Preparation Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart Y	Standards of Performance for Coal Preparation Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart Z - AAa	Standards of Performance for Steel Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart BB	Standards of Performance for Kraft Pulp Mills	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart CC	Standards of Performance for Glass Manufacturing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart DD	Standards of Performance for Grain Elevators	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart EE	Standards of Performance for Surface Coating of Metal Furniture	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart GG	Standards of Performance for Stationary Gas Turbines	No	-	N/A – Cannon AFB does not have stationary gas turbines.
NSPS 40 CFR 60, Subpart HH	Standards of Performance for Lime Manufacturing	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart KK	Standards of Performance for Lead-Acid Battery Manufacturing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart LL	Standards of Performance for Metallic Mineral Processing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart MM	Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations	No	-	N/A – Cannon AFB does not operate a light duty truck assembly plant.
NSPS 40 CFR 60, Subpart MM	Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations	No	-	N/A – Cannon AFB does not operate a light duty truck assembly plant.
NSPS 40 CFR 60, Subpart NN	Standards of Performance for Phosphate Rock Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart PP	Standards of Performance for Ammonium Sulfate Manufacture	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart QQ	Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart RR	Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart SS	Standards of Performance for Industrial Surface Coating: Large Appliances	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart TT	Standards of Performance for Metal Coil Surface Coating	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart UU	Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart WW	Standards of Performance for the Beverage Can Surface Coating Industry	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart XX	Standards of Performance for Bulk Gasoline Terminals	No	-	N/A – Cannon AFB does not have any facilities that qualify as a bulk gasoline terminal as gasoline throughput at the POL yard is less than 75,700 liters (20,000 gallons) per day (40 CFR 60.500(a) and 501).
NSPS 40 CFR 60, Subpart AAA	Standards of Performance for New Residential Wood Heaters	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart BBB	Standards of Performance for the Rubber Tire Manufacturing Industry	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart DDD	Standards of Performance for VOC Emissions from the Polymer Manufacturing Industry	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart FFF	Standards of Performance for Flexible Vinyl and Urethane Coating and Printing	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart GGG	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart HHH	Standards of Performance for Synthetic Fiber Production Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart III	Standards of Performance for VOC Emissions from the SOCMI Air Oxidation Unit Process	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart JJJ	Standards of Performance for Petroleum Dry Cleaners	No	-	N/A – Cannon AFB does not operate petroleum dry cleaning facility.
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO_2 Emissions	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart NNN	Standards of Performance for VOC Emissions from SOCMI Distillation Operations	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	No	-	Applicable to contractor-owned/operated systems.
NSPS 40 CFR 60, Subpart PPP	Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart QQQ	Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart RRR	Standards of Performance for VOC Compound Emissions from SOCMI Reactor Processes	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart SSS	Standards of Performance for Magnetic Tape Coating Facilities	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart TTT	Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart UUU	Standards of Performance for Calciners and Dryers in Mineral Industries	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart VVV	Standards of Performance for Polymeric Coating of Supporting Substrates Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NSPS 40 CFR 60, Subpart WWW & XXX	Standards of Performance for Municipal Solid Waste Landfills	No	-	N/A – Cannon AFB does have a municipal solid waste landfill.
NSPS 40 CFR 60, Subpart AAAA & BBBB	Standards of Performance Municipal Waste Combustion Units	No	-	N/A - Cannon AFB does not have any municipal waste combustion units.
NSPS 40 CFR 60, Subpart CCCC, DDDD, EEEE & FFFF	Standards of Performance for Solid Waste Incineration Units	No	-	N/A - Cannon AFB does not have any solid waste incineration units.
NSPS 40 CFR 60, Subpart HHHH	Emission Guidelines and Compliance Times for Coal Fired Electric Steam Generating Units	No	-	N/A – Cannon AFB does not operate any coal fired combustion equipment
NSPS 40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Yes	19004-19006, 19010, 19016-19020, 19301-19303, 19305-19315, 19317-19326, 19331-19335, 19338, 19340-19343, 19347, 19356, 19358, 19359, 19361, 19362, 19364-19369	This applies to new, modified, and reconstructed compression ignition IC engines larger than 11 hp constructed after the rule proposal date of July 11, 2005 (essentially, those engines manufactured after April 1, 2006). Cannon AFB has affected existing sources and Cannon AFB anticipates purchasing new emergency back-up engines in the future. The Stationary Compression Ignition Internal Combustion Engines are subject to the requirements of 40 CFR Part 60 Subpart IIII General Requirements and Paragraph 60.4205 (a) and (c).
NSPS 40 CFR 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	-	N/A – Cannon AFB does not operate stationary spark ignition engines (40 CFR 60.4230(a)).
NSPS 40 CFR 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	No	-	N/A – Cannon AFB does not have stationary combustion turbines.
NSPS 40 CFR 60, Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production,	No	-	N/A – Cannon AFB is not a natural gas processing plant as defined by the subpart.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
	Transmission, and Distribution			
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	-	Cannon AFB does not operate any electric generating units that are subject to Subpart TTTT.
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	-	Cannon AFB does not operate any electric utility generating units.
NESHAP 40 CFR 61 Subpart A	General Provisions	Yes	See below (Subpart M)	Applicable for each emissions unit affected by a NESHAP, as indicated below.
NESHAP 40 CFR 61, Subpart B	National Emissions Standards for Radon Emissions from Underground Uranium Mines	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart C	National Emissions Standards for Beryllium	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart D	National Emissions Standards for Beryllium Rocket Motor Firing	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart E	National Emission Standards for Mercury	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart F	National Emission Standards for Vinyl Chloride	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart H	National Emission Standards for Emissions of Radionuclides other than Radon from DOE Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart I	National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees and not covered by Subpart H	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart J	National Emission Standards for Equipment Leaks (fugitive emissions source) of Benzene	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart K	National Emission Standard for Radionuclide Emissions from Elemental Phosphorous Plants	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NESHAP 40 CFR 61, Subpart L	National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plants	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart M	National Emission Standard for Asbestos	Yes	Facility	Applicable when Cannon AFB conducts asbestos demolition and removal projects (40 CFR 61.145). However, *Cannon AFB has no existing or planned operation/activity at the time of this renewal that triggers the applicability of these requirements.*
NESHAP 40 CFR 61, Subpart N	National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart O	National Emission Standard for Inorganic Arsenic Emissions from Primary Copper Smelters	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart P	National Emission Standard for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart Q	National Emission Standards for Radon Emissions from DOE Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart R	National Emission Standards for Radon Emissions from Phosphogypsum Stacks	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart T	National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart W	National Emission Standards for Radon Emissions from Operating Mill Tailings	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart Y	National Emission Standards for Benzene Emissions from Benzene Storage Vessels	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart BB	National Emission Standards for Benzene Emissions from Benzene Transfer Stations	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 61, Subpart FF	National Emission Standards for Benzene Waste Operations	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NESHAP 40 CFR 63, Subpart A	General Provisions	Yes	See entries later in this table for specific emission units subject 40 CFR 63	Cannon AFB is not subject to any of the major source MACT standards established in the 40 CFR 63 subsections. Cannon AFB is an area/minor source of HAP: HAP emissions < 10 tpy of any one HAP and < 25 tpy of any combination of HAPs. 40 CFR 63 Subparts A, ZZZZ, CCCCCC, BBBBBB are applicable to Cannon AFB because it is an area/minor source of HAP. Cannon AFB is subject to sections of this subpart as defined by each applicable area source NESHAP. See below for applicability of area source standards.
NESHAP 40 CFR 63, Subpart M	National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart N	National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	No	-	N/A – Cannon AFB has no affected facilities. No electroplating conducted.
NESHAP 40 CFR 63, Subpart O	Ethylene Oxide Emissions Standards for Sterilization Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart T	National Emission Standards for Halogenated Solvent Cleaning	No	-	N/A – Cannon AFB does not utilize solvent cleaning machines containing methylene chloride, perchloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform in concentrations greater than 5 percent by weight. (40 CFR 63.460(a)).
NESHAP 40 CFR 63, Subpart X	National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart Y	National Emission Standards for Marine Tank Vessel Loading Operations	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart EEE	National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors	No	-	N/A – Cannon AFB does not utilize a hazardous waste combustor.
NESHAP 40 CFR 63, Subpart TTT	National Emission Standards for Hazardous Air Pollutants for Primary Lead Smelting	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart VVV	National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works	No	-	N/A – Cannon AFB has no affected facilities. Cannon AFB does not accept any regulated waste.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NESHAP 40 CFR 63, Subpart AAAA	National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills	No	-	N/A – Cannon AFB does not have a municipal solid waste landfill.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	19001-19003, 19007-19009, 19013-19015, 19304, 19316, 19339, 19344, 19345, 19357, 19363	Existing emergency Reciprocating Internal Combustion Engines (RICE) located at an area source of HAP emissions are subject to this subpart (§ 63.6590(a)(1)(iii)). Cannon AFB owns and operate Stationary RICE (emergency generators and fire pump engines), which are subject to the requirements of 40 CFR Part 63 Subpart ZZZZ.
NESHAP 40 CFR 63, Subpart AAAAA	National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants	No	-	N/A – Cannon AFB has no affected facilities.
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 - Cannon AFB is not a Major Source for HAPs.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	-	Cannon AFB does not own or operate any coal & oil fire electric utility steam generating Unit.
NESHAP 40 CFR 63, Subpart WWWWW	National Emission Standards for Hospital Ethylene Oxide Sterilizers	No	-	N/A – Cannon AFB does not have an ethylene oxide sterilizer.
NESHAP 40 CFR 63, Subpart YYYYY	National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart ZZZZZ	National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart BBBBBB	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities	Yes	16001	Cannon AFB operates a small gasoline distribution plant subject to the requirements of 40 CFR Part 63 Subpart BBBBBB.
MACT 40 CFR 63 Subpart CCCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	Yes	15001,15003, 22001, 22002, 22004, 22005,22006	Cannon AFB owns and operates Gasoline Dispensing Facilities which are subject to the requirements of 40 CFR Part 63 Subpart CCCCCC.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NESHAP 40 CFR 63, Subpart DDDDDD	National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart EEEEEE	National Emission Standards for Hazardous Air Pollutants for Primary Copper Smelting Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart FFFFFF	National Emission Standards for Hazardous Air Pollutants for Secondary Copper Smelting Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart GGGGGG	National Emission Standards for Hazardous Air Pollutants for Primary Nonferrous Metals Area Sources—Zinc, Cadmium, and Beryllium	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart HHHHHH	National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources	No	-	N/A – Cannon AFB's activities are exempt, meets the definition of 63.11169(d)(1).
NESHAP 40 CFR 63 Subpart JJJJJJ	National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers at Area Sources	No	-	N/A – Cannon AFB only operate natural gas boilers which are exempted by §63.11195(e).
NESHAP 40 CFR 63, Subpart LLLLLL	National Emission Standards for Hazardous Air Pollutants for Acrylic and Modacrylic Fibers Production Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart MMMMMM	National Emission Standards for Hazardous Air Pollutants for Carbon Black Production Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart NNNNNN	National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: Chromium Compounds	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart OOOOOO	National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources	No	-	N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart PPPPPP	National Emission Standards for Hazardous Air Pollutants for Lead	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
	Acid Battery Manufacturing Area Sources			
NESHAP 40 CFR 63, Subpart QQQQQQ	National Emission Standards for Hazardous Air Pollutants for Wood Preserving Area Sources	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart RRRRRR	National Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing Area Sources	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart SSSSSS	National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart TTTTTT	National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart WWWWWW	National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart XXXXXX	National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAP 40 CFR 63, Subpart YYYYYY	National Emission Standards for Hazardous Air Pollutants for Area Sources: Ferroalloys Production Facilities	No	-	N/A – N/A – Cannon AFB has no affected facilities.
NESHAPS 40 CFR 64	Compliance Assurance Monitoring	No	-	N/A – Cannon AFB has no individual emission units that are major in and of itself.
NESHAPS 40 CFR 68	Chemical Accident Prevention	No	-	N/A - Cannon AFB does not meet the following criteria. The stationary source that has 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 – Cannon AFB does not generate commercial electric power or electric power for sale.
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions	No	-	N/A – Cannon AFB 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 – N/A – Cannon AFB does not generate commercial electric power or electric power for sale.
40 CFR 79	Registration of Fuels and Fuel Additives	No	-	N/A – Cannon AFB has no affected facilities.

FEDERAL REGULATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 80, Subpart A	General Provisions	No	-	All subsections of this part that are applicable to refineries and motor vehicle manufacturers are not applicable to Cannon AFB. See below for the applicability for retail outlets.
40 CFR 80, Subparts B & C	Regulation of Fuels and Fuel Additives	No	-	Not applicable under Title V
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	No	-	Not applicable under Title V
CAA Section 112(r)	Hazardous Air Pollutants	No	-	Cannon AFB does not exceed threshold quantities of regulated substances in a process.

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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.

Cannon AFB has developed and maintains an Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies. This Plan is kept on site and is available to NMED upon request.

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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.

Cannon AFB does not propose any alternative operating schedules outside of the parameters discussed in Sections 3, 6, and 10 of this application.

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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.

Air dispersion modeling was submitted with the permit application associated with NSR Permit Number 1517-M5. Cannon AFB is not reporting any new emission sources in this Title V Operating Permit application that would require dispersion modeling. Dispersion modeling analyses remain unchanged from the report submitted with the most recent NSR permit modification.

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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
21003, 21005, 21006	Performed initial laboratory particle size distribution test for paints used in the Cannon AFB paint booths to comply with NSR permit.	6-8 August 2012
22004, 22005, 22006	Vapor balancing system performance testing required pursuant to 40 CFR 63.11120(a), NESHAP for Gasoline Dispensing Facilitites (GDFs) and Section A602.B of Operating Permit No. P119-R1.	2 February 2017 & 3 April 2017 (retest)
22004, 22005, 22006	Vapor balancing system performance testing required pursuant to 40 CFR 63.11120(a), NESHAP for Gasoline Dispensing Facilitites (GDFs) and Section A602.B of Operating Permit No. P119-R2	4 February 2020
22004, 22005, 22006	Vapor balancing system performance testing required pursuant to 40 CFR 63.11120(a), NESHAP for Gasoline Dispensing Facilitites (GDFs) and Section A602.B of Operating Permit No. P119-R2.	17 January 2023

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Section 18

Addendum for Streamline Applications

Do not print this section unless this is a streamline application.

Streamline Applications do not require a complete application. Submit Sections 1-A, 1-B, 1-D, 1-F, 1-G, 2-A, 2-C thru L, Sections 3 thru 8, Section 13, Section 18, Section 22, and Section 23 (Certification). Other sections may be required at the discretion of the Department. 20.2.72.202 NMAC Exemptions do not apply to Streamline sources. 20.2.72.219 NMAC revisions and modifications do not apply to Streamline sources, thus 20.2.72.219 type actions require a complete new application submittal. Please do not print sections of a streamline application that are not required.

Cannon AFB is not submitting a streamline application; therefore, this section is not applicable.

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Section 19

Requirements for Title V Program

Do not print this section unless this is a Title V application.

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.

Cannon AFB is not subject to 40 CFR 64.

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 and belief formed after reasonable inquiry, Cannon AFB certifies that the Base complies with each applicable requirement.

20.2.7 NMAC – Excess Emissions During Malfunction, Startup, or Scheduled Maintenance

Cannon AFB is required to report incidences of excess emissions and will do so in accordance with applicable regulations. Cannon AFB verifies compliance with this regulation through recordkeeping and emissions tracking for its permitted sources.

20.2.8 NMAC – Emissions Leaving New Mexico

Cannon AFB is required to ensure that emissions leaving the State of New Mexico shall not exceed the standards and regulations of the receiving state. The dispersion modeling that Cannon AFB conducted for its construction permit application demonstrated that emissions did not cause or contribute to an exceedance of any National Ambient Air Quality Standards. Since the ambient concentrations associated with source emissions decrease with distance from the source, Cannon AFB has ensured that its emissions do not exceed the standards or regulations of bordering states.

20.2.60 NMAC – Open Burning

Cannon AFB typically does not conduct open burning activities at the Base. Cannon AFB does conduct firefighter training activities which involve the combustion of propane and occasionally wood pallets. Cannon AFB notifies the AQB prior to any fire training activities that involve burning materials.

20.2.61 NMAC – Regulation to Control Smoke and Visible Emissions

Only 20.2.61 NMAC (109), (110)(A), and (111) are applicable to sources at Cannon AFB. Cannon AFB has equipment maintenance procedures in place to minimize smoke and visible emissions. There are a combination of Air Force Instructions and Policies, federal requirements, and permit conditions that require routine equipment maintenance, records of this maintenance, and Method 9 monitoring. Cannon uses pipeline natural gas for external combustion units. For emergency and fire pump engines visible emission tests are conducted by Method 9 certified personnel at the frequency prescribed by the current Title V permit.

20.2.70 NMAC – Operating Permits

Cannon AFB is a major source as defined in 20.2.70 NMAC. Cannon AFB currently operates under Permit No. P119-R2 issued on 22 May 2019 and complies with applicable requirements and conditions as certified in the most recent Annual Compliance Certification submitted to NMED AQB on 31 October 2022. This application is for the renewal of the Title V Operating permit for Cannon AFB.

20.2.72 NMAC – Permits

Cannon AFB has applied for a construction permit for all sources that exceed the applicability threshold for 20.2.72.200.A and 20.2.72.200.C NMAC. Cannon AFB has been issued a permit pursuant to 20.2.72 NMAC and operates regulated facilities in accordance with applicable provisions of that permit.

20.2.73 NMAC – Notice of Intent and Emissions Inventory Requirements

Cannon AFB has complied with 20.2.73.300 NMAC Emission Inventory Requirements on the schedule requested by AQB; due to AQB annually on April 1st every year. Compliance with this requirement is demonstrated by maintaining records of the submitted emissions inventories. In addition, copies of the past inventories can be accessed via AQB's Air Emissions Inventory Reporting (AEIR) tool.

20.2.74 NMAC – Permits, Prevention of Significant Deterioration (PSD)

This regulation is currently not applicable to Cannon AFB because Cannon AFB has federally enforceable permit limits below the PSD major source threshold. Cannon AFB does not have the potential to emit more than 250 tpy of any criteria pollutant and is, by definition, a minor source under PSD rules. Cannon AFB currently operates at levels that are below the major PSD threshold and all modifications to operations at the Base are reviewed to determine whether the action affects its PSD status.

20.2.77 NMAC – New Source Performance Standards (NSPS)

New Mexico has adopted NSPS promulgated by the Environmental Protection Agency in 40 CFR 60 through 15 January 2017. The only NSPSs that are applicable to Cannon AFB's operations are 40 CFR 60 Subpart A: General Provisions and 40 CFR 60 Subpart IIII: Stationary Compression Ignition Internal Combustion Engines.

Cannon AFB has installed sources to which NSPS apply; therefore, Cannon AFB must also meet the general provisions in 40 CFR 60 Subpart A. Those provisions in 40 CFR 60.7 include recordkeeping and notification with which Cannon AFB has complied.

Cannon AFB operates compression ignition emergency engines that meet the applicability requirements of 40 CFR 60 Subpart IIII. All applicable emergency engines are fitted with a non-resettable hour meters prior to startup. Emergency engines are only operated during emergency situations and for maintenance as prescribed by manufacturer specifications. These generators use diesel fuel that meet the requirements of 40 CFR 80.5 10 (a). Cannon AFB ensures that these engines are operated and configured according to

the manufacturer's specifications. Cannon AFB maintains all records of engine manufacturer data and control device vendor data indicating compliance with the standards, as applicable.

20.2.78 NMAC – National Emission Standards for Hazardous Air Pollutants

New Mexico has adopted NESHAPs promulgated by the EPA in 40 CFR 61 as amended through 28 January 2021.

Cannon complies with the applicable portions of Subpart M. Cannon AFB evaluates all demolition and renovation activities prior to commencement and complies with all requirements of this NESHAP.

20.2.80 NMAC – Stack Height Requirements

Cannon AFB has taken 20.2.80 NMAC into consideration for any ambient air quality modeling it has performed in the past and will continue to do so for future modeling requirements.

20.2.82 NMAC – National Emission Standards for Hazardous Air Pollutants

The State of New Mexico has adopted NESHAPs promulgated by the Environmental Protection Agency in 40 CFR 63 as amended through 28 January 2021. The only NESHAPs that are applicable to Cannon AFB's operations are 40 CFR 63 Subpart A: General Provisions; Subpart ZZZZ: HAPs from Stationary RICE; Subpart BBBBBB: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities; and Subpart CCCCCC: Gasoline Dispensing Facilities. Cannon AFB is not a major source with respect to Title III of the Clean Air Act Amendments of 1990 and is not subject to any major source MACT standards enacted under 40 CFR 63.

Cannon AFB operates emergency compression ignition (CI) internal combustion engines that meet the applicability requirements of 40 CFR 63 Subpart ZZZZ. Cannon AFB is an area source as defined by § 63.6585. All emergency engines are fitted with a non-resettable hour meter prior to startup. Emergency engines are only operated during emergency situations and for maintenance purposes. Cannon AFB ensures that these engines are operated and configured according to the manufacturer's specifications.

Cannon AFB maintains copies of the required notifications submitted pursuant to 40 CFR 63 Subpart CCCCCC. Cannon AFB maintains copies of the results from the testing required under § 63.11120(a). Cannon AFB maintains the required records to demonstrate compliance with submerged filling heights for the affected gasoline storage tanks. Cannon AFB implements standard operating procedures in accordance with §§ 63.11085 and 63.11116(a) to ensure that gasoline is handled in a manner that minimizes emissions to the atmosphere.

Pursuant to 40 CFR Part 63 Subpart BBBBBB Cannon AFB uses bottom fill for its cargo/tank truck, performs monthly leak inspections, and employs work practices to minimize VOC emissions to the atmosphere.

40 CFR 80 – Regulation of Fuels and Fuel Additives

Cannon AFB meets the definition of a wholesale purchaser-consumer as defined in 40 CFR 80. The gasoline dispensing operations at Cannon AFB comply with the dispensing nozzle design and flow-rate restrictions of 40 CFR 80.22. Gasoline and diesel fuel dispensed by Cannon AFB comply with the requirements specified in 40 CFR 80.27 and 80.29. Cannon AFB does not "additize" its gasoline, as prohibited in 40 CFR 80.155.

40 CFR 82 – Protection of Stratospheric Ozone

Subpart B of 40 CFR 82 applies to servicing, maintaining, repairing, and disposal of motor vehicle air conditioners (MVACs) and MVAC-like appliances. Cannon AFB is in compliance with 40 CFR 82.34 because Cannon AFB uses approved refrigerant recycling equipment and repairs are performed by certified technicians. Cannon AFB is in compliance with 40 CFR 82.42: Certification, Recordkeeping and Public Notification requirements. Cannon AFB maintains records that all personnel performing air conditioner servicing are trained and certified technicians in accordance with 40 CFR 82.40. Cannon AFB also maintains records of the refrigerant recycled and the name and address of the facility where the recycled refrigerant is sent.

Subpart F of 40 CFR 82 applies to stationary air conditioning equipment service and repair operations. Cannon AFB uses approved refrigerant recycling equipment and repairs are performed by certified technicians. Cannon AFB has kept records confirming that all personnel performing maintenance on stationary air conditioning equipment are trained and certified technicians. Subpart F also specifies required disposal and servicing practices (40 CFR 82.156) and prohibits the following actions (40 CFR 82.154):

- Intentional release of any Class I or Class II ozone depleting compound during the maintenance, servicing, repair, or disposal of refrigeration appliances; and
- Altering the design of certified refrigerant recycling or recovery equipment in a way that would affect the equipment's ability to meet the certification standards.

Cannon AFB has not conducted any operations that violate these prohibitions.

Subpart G of 40 CFR 82 prohibits the use of a substitute for a Class I or Class II ozone depleting compounds that the user knows or has reason to know was manufactured, processed, or imported in violation of the EPA's Significant New Alternatives Policy (SNAP). This section also prohibits the use of a substitute without adhering to any restrictions set out by EPA's acceptability decision for that substitute. Cannon AFB is not using any unapproved ODC substitute compounds.

Subpart H of 40 CFR 82 affects halon systems. This rule specifies that no person may:

- Sell a product containing a blend of two or more halon compounds;
- Release any halon compound (except for de minims releases, as defined within the regulation); or
- Dispose of any halon except by sending to a manufacturer, fire equipment dealer, or recycler that operates in accordance with National Fire Protection Association (NFPA) 10 and NFPA 12A standards.

This subpart also requires any organization with halon-containing equipment to provide training for any technicians that maintain or operate such equipment. Cannon AFB complies with applicable portions of 40 CFR 82 Subpart H.

NSR Permit No. 1517M5R1 through R14

Part A103 – Facility: Applicable Requirements

Cannon AFB maintains compliance with the applicable requirements listed in Table 103 of Permit No. 1517-M5R1.

Part A106 – Allowable Emissions

This condition establishes emission limits for NO_X, CO, VOC, TSP, PM_{10}, and $PM_{2.5}$ from the permitted operations and equipment. Cannon AFB complies with these limits and maintains records to demonstrate compliance. Cannon AFB will construct and operate the facilities in accordance with all representations in the permit applications and any supplementary submittals. Individual HAP and total HAP emissions are maintained below the emission limitations of 9.9 and 24.9 tons per year, respectively.

Part A110 Facility: Fuel Sulfur Requirements

Cannon AFB maintains compliance with all fuel sulfur content requirements included in this permit condition. Records are maintained that demonstrate compliance with the sulfur content requirements.

Part A111 Facility: 20.2.6 NMAC Opacity

Cannon AFB maintains compliance with all opacity requirements included in this permit condition. Cannon AFB uses pipeline natural gas and performs Method 9 opacity tests as required.

Part A601 External Combustion

Cannon AFB maintains compliance with the monitoring and recordkeeping requirements for all external combustion units included in this permit condition. This includes the monitoring and recording of 12-month rolling natural gas usage.

Part A602 Fuel Dispensing and Fuel Storage Tanks

Cannon AFB maintains compliance with the monitoring and recordkeeping requirements for all fuel dispensing and fuel storage tanks included in this permit condition. This includes the monitoring and recording of 12-month rolling throughput.

Part A603 Surface Coating – Paint Booths

Cannon AFB maintains compliance with the monitoring and recordkeeping requirements for all operating paint booths included in this permit condition. This includes maintaining paint usage logs and the tracking of 12-month rolling paint usage and 12-month rolling VOC and HAP emissions.

Part A604 Internal Combustion Engines

Cannon AFB maintains compliance with the monitoring and recordkeeping requirements for all internal combustion engines included in this permit condition. Compliance with 40 CFR 60, Subpart IIII and 40 CFR 63 Subpart ZZZZ is maintained.

Part A605 Miscellaneous Chemical Use

Part A605 references the Title V permit. Cannon AFB follows the requirements specified in the referenced permit.

Part B General Conditions

Cannon AFB maintains compliance with the applicable requirements in the General Conditions.

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.

Cannon AFB will maintain compliance with the conditions of this permit through recordkeeping, emission calculations, equipment maintenance, and the continued implementation of the best management practices, including those discussed in Section 14 of this application. Cannon AFB will ensure continued compliance with air quality regulations through reviewing new air quality regulations as they are proposed and implemented, finding opportunities to use new emission reduction techniques and technology as appropriate and applicable, and reviewing all proposed projects base wide to ensure that all potential air quality permitting, permit modification and notification requirements are met. If Cannon AFB becomes subject to new federal air quality regulations during the term of the operating permit, it will comply with the applicable requirements on the schedule presenting in the applicable rule and will modify the operating permit to include the applicable requirements.

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.

- A Semi-Annual Report of monitoring activities is due within 45 days following the end of every 6-month reporting period. The six month reporting periods start on **October 1st** and **April 1st** of each year.
- The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on **October 1st of each year**.

Cannon AFB submits compliance certification forms to the NMED AQB annually on October 30th as required by Condition A109.B of Permit No. P119-R2. Cannon AFB submits reports of required monitoring activities to the AQB semiannually on May 15th and November 14th as required by Condition A109.A of P119-R2. Cannon AFB does not propose to modify this reporting schedule.

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).

---

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.)

Regulation Citation	Brief Description	Comments on Applicability
40 CFR 82 Subpart A	Production and Consumption Controls	This subpart does not apply to Cannon AFB operations except as referred to by other applicable subparts.
40 CFR 82 Subpart B	Servicing of Motor Vehicle Air Conditioners (MVAC)	This subpart applies to some operations at Cannon AFB servicing MVAC.
40 CFR 82 Subpart C	Ban on Nonessential Products Containing Class I Substances and Ban on Non-essential Products Containing or Manufactured with Class II Substances	This subpart does not apply to Cannon AFB operations.
40 CFR 82 Subpart D	Federal Procurement	The US Air Force complies with this subpart.
40 CFR 82 Subpart E	The Labeling of Products Using Ozone-Depleting Substances	This subpart does not apply to Canon AFB operations.
40 CFR 82 Subpart F	Recycling and Emission Reduction	This subpart applies to some operations at Cannon AFB servicing refrigeration equipment and disposing of refrigeration equipment.
40 CFR 82 Subpart G	Significant New alternatives Policy Program	Cannon AFB uses substitutes for Class I and II ODS when possible.

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**.

This section is not applicable to Cannon AFB. Cannon AFB is in compliance with all applicable air quality regulations at the time of this permit application submittal.

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.

This section is not applicable to Cannon AFB. The Base does not store more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115.

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.)

No construction is being proposed. Cannon AFB is located approximately 16 miles from the western border of Texas.

19.9 - Responsible Official

Provide the Responsible Official as defined in 20.2.70.7.AD NMAC:

Terence G. Taylor, Col, USAF
Commander, 27th Special Operations Wing
Comm: (575) 784-2727
terence.taylor@us.af.mil

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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.

Cannon AFB has included a tracked changes version of Operating Permit No. P119-R2 to present the proposed updates and changes to the operating permit. We have provided a separate MS Word file (Final-P119R2-CAFB_markup) that reflects the changes indicated in this section. Note, changes to the TOC are not reflected in the markup version of the document.

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Air Quality Bureau
TITLE V OPERATING PERMIT
Issued under 20.2.70 NMAC

Certified Mail No: 7016 2140 0000 7340 1552
Return Receipt Requested

Operating Permit No:	P119-R~~2~~3
Facility Name:	Cannon Air Force Base
Permittee Name:	US Air Force Fb4855 - Cannon AFB
Mailing Address:	27 SOCES/CEIE 506 N. Air Commando Way Cannon AFB, NM 88103
TEMPO/IDEA ID No:	106 - PRT20170003
AIRS No:	35090004
Permitting Action:	Title V Permit Renewal
Source Classification:	Title V Major, PSD Minor
Facility Location:	UTM E 654998 m, UTM N 3805630 m, Zone 13, Datum: WGS84
County:	Curry
Air Quality Bureau Contact	Joseph Kimbrell
Main AQB Phone No.	(505) 476-4300
TV Permit Expiration Date:	~~May 22, 2024~~
TV Renewal Application Due:	~~May 22, 2023~~

_____ ~~May 22, 2019~~

Liz Bisbey-Kuehn **Date**
Bureau Chief
Air Quality Bureau

Template version: 2/5/2019

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PART A FACILITY SPECIFIC REQUIREMENTS

A100 Introduction

A. Not Applicable

A101 Permit Duration (expiration)

A. The term of this permit is five (5) years. It will expire five years from the date of issuance. Application for renewal of this permit is due twelve (12) months prior to the date of expiration. (20.2.70.300.B.2 and 302.B NMAC)

B. If a timely and complete application for a permit renewal is submitted, consistent with 20.2.70.300 NMAC, but the Department has failed to issue or disapprove the renewal permit before the end of the term of the previous permit, then the permit shall not expire and all the terms and conditions of the permit shall remain in effect until the renewal permit has been issued or disapproved. (20.2.70.400.D NMAC)

A102 Facility: Description

A. This facility is a military installation that is home to the U.S. Air Force 27th Special Operations Wing (SOW), whose primary mission is to plan and execute specialized contingency operations using advanced aircraft and tactics. This function requires the operation of several regulated air emission sources. Stationary sources include external combustion equipment, paint booths, fuel loading activities, fuel storage tanks, fuel dispensing activities, emergency internal combustion engines, emergency fire pump engines, and miscellaneous chemical usage.

B. This facility is located approximately 6.7 miles west of the intersection of 7th and Main Street in Clovis, NM in Curry County. (20.2.70.302.A(7) NMAC)

C. This renewal includes minor modifications as listed below: The description of this modification is for informational purposes only and is not enforceable.

1) ~~Revision to Condition A115.A HAPs: An update to recordkeeping procedures related to the tracking of facility-wide hazardous air pollutant (HAP) emissions' and updates to the requirement to use MS-Excel to perform all HAP calculations~~ Addition of identical replacement boiler units in Building 4607 (EU 14007, 14008, and 14009) as reflected in the NSR technical revision 1517M5R10 issued 1/20/21.

2) ~~Updates to paint products used and usage limits (gal/hr) at the paint spray booths~~ Removal of EU 14001 through 14004 (8.25 and 8.628 MMBtu/hr heating units) in

Building 199 and a corresponding reduction in the natural gas capacity/limit from 429.42 to 164.68 million cubic feet per year to reflect the fuel burning capacity for the remaining permitted boiler and heating units (EU 14007 through EU 14014).

3) ~~Removal of emergency generator units 19336, 19337, 19346, and 19354~~Updates to paint products used and usage limits (gal/hr) at the paint spray booths (EU 21003, 21005, and 21006).

4) ~~Addition of a new fire pump (emission unit 19020 at Bldg. 1434), and removal of Units 19011 (Fire Pump) and Unit 19012 (Fire Pump at Bldg. 2326)~~Removal of emergency generator units 19327, 19328, 19329, and 19330.

5) ~~Addition of a new emergency generator 19366 at the AOS Tower~~Inclusion of replacement emergency generators for EU Numbers 19306, 19308, 19310, 19313, 19315, 19322, 19340, and 19347.

6) ~~Addition of repaired paint booth heater at Bldg. 375 (emission unit 14014)~~Addition of new emergency generators; EU 19367 (Bldg. 4904, 755 hp), EU 19368 (Bldg. 102, 237 hp), and EU 19369 (Bldg. 3050, 39.9 hp).

7) ~~Addition 40 CFR Part 63 Subpart BBBBBB applicability (emission unit 16001)~~ Inclusion of four additional placeholder units (ten total EU 19370 – EU 19379) for future emergency generators and two additional placeholder units (five total EU 19021 – 19025) for fire pump engines. Note despite the addition of the future units, the overall allowable emissions for the internal combustion engines are moderately lower when compared to P119-R2. This is due to the removal of four large emergency generators (EU 19327 - 19330) and the inclusion of replacement units that have lower emission rates than the units that they replaced.

8) Removal of EU 22003 (300 gallon gasoline storage tank) and the associated fuel dispensing operation (EU 15002). The tank is no longer on Cannon AFB.

~~7)~~9) Change in the throughput/capacity limit for the Gasoline Distribution Plant (EU 16001). It is requested that the limit be increased from 27,810 to 65,00 gallons per year. This increase was previously approved in an NSR Administrative Amendment (1517M5R14) approved on July 20, 2022. The 65,000 gallons per year represents the maximum amount of gasoline to be loaded into cargo trucks for distribution to various CAFB sites. The associated VOC emission increased from 0.11 to 0.16 tons per year.

D. Table 102.A and Table 102.B show the total potential to emit (PTE) from this facility for information only, not an enforceable condition, excluding insignificant or trivial activities.

Table 102.A: Total Potential to Emit (PTE) from Entire Facility[1]

Pollutant	Emissions (tons per year)	
	NSR 1517M5R1	TV P119R~~2~~3
Nitrogen Oxides (NOx)	22.5	~~131.5~~103.0

Pollutant	Emissions (tons per year)	
	NSR 1517M5R1	TV P119R~~2~~3
Carbon Monoxide (CO)	18.9	~~72.4~~57.4
Volatile Organic Compounds (VOC)	106.2	~~97.6~~98.4
Sulfur Dioxide (SO_2)	< 1	9.~~3~~8
Particulate Matter (PM)	2.3	~~7.7~~6.1
Particulate Matter less than 10 microns (PM_{10})	2.3	~~7.7~~6.1
Particulate Matter less than 2.5 microns ($PM_{2.5}$)	2.1	~~7.3~~5.7
Green House Gas (GHG) (CO_2e)	< 100,000	< 100,000

[1] Table 102.A does not include the PTE of Title V insignificant and trivial activities.

Table 102.B: Total Potential to Emit (PTE) for *HAPs that exceed 1.0 tons per year

Pollutant	Emissions (tons per year)
Propylene Glycol Methyl Ether	2.~~9~~3
Ethylbenzene	2.~~0~~2
Methanol	2.2
Methyl Isobutyl Ketone	~~3.8~~5.1
~~Styrene~~	~~2.4~~
Toluene	~~6.4~~7.6
Xylene	~~4.7~~5.5
Individual HAP	9.9[2]
Total HAPs*	24.9[2]

[1] Table 102.B does not include the PTE of Title V insignificant and trivial activities.

[2] Individual and Total HAP emissions are limited to 9.9 and 24.9 tons per year, respectively. The permittee reported Total HAPs in Table 2-I of the application as 24.~~3~~ 8 tpy.

A103 Facility: Applicable Regulations and Non-Applicable Regulations

A. The permittee shall comply with all applicable sections of the requirements listed in Table 103.A.

Table 103.A: Applicable Requirements

Applicable Requirements	Federally Enforceable	Unit No.
NSR Permit No: 1517M5R1, M5R2, M5R3 through M5R14 (Per 20.2.72 NMAC)	X	Entire facility
20.2.1 NMAC General Provisions	X	Entire Facility
20.2.7 NMAC Excess Emissions	X	Entire facility
20.2.60.112 NMAC Open Burning	X	Entire facility
20.2.61 NMAC Smoke and Visible Emissions	X	Basewide Combustion Units

Applicable Requirements	Federally Enforceable	Unit No.
20.2.70 NMAC Operating Permits	X	Entire facility
20.2.71 NMAC Operating Permit Emission Fees	X	Entire facility
20.2.72 NMAC Construction Permit	X	Entire facility
20.2.73 NMAC Notice of Intent and Emissions Inventory Requirements	X	Entire facility
20.2.77 NMAC New Source Performance Standards	X	Units subject to 40 CFR 60
20.2.82 NMAC MACT Standards for Source Categories of HAPS	X	Units subject to 40 CFR 63
40 CFR 50 National Ambient Air Quality Standards	X	Entire facility
40 CFR 60, Subpart A, General Provisions	X	Units subject to 40 CFR 60
40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	X	Emergency Engines
40 CFR 63, Subpart A, General Provisions	X	Units subject to 40 CFR 63
40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	X	Emergency & Fire pump engines
40 CFR 63, Subpart CCCCCC, NESHAP for Source Category: Gasoline Dispensing Facilities	X	15001, ~~15002,~~ 15003, 22001, 22002, 22003, 22004, 22005, 22006
40 CFR 63, Subpart BBBBBB, NESHAP: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities	X	16001
Title VI – 40 CFR 82, Protection of Stratospheric Ozone	X	Entire facility

B. Table 103.B lists requirements that are **not** applicable to this facility. This table only includes those requirements cited in the application as applicable and determined by the Department to be not applicable, or the Department determined that the requirement does not impose any conditions on a regulated piece of equipment.

Table 103.B: Non-Applicable Requirements

Non-Applicable Requirements	(1)	(2)	Justification For Non-Applicability
20.2.2 NMAC Definitions		X	
20.2.3 NMAC Ambient Air Quality Standards	X		
20.2.5 NMAC Source Surveillance		X	
20.2.65 NMAC Smoke Management	X		
20.2.75 NMAC Permit Fees		X	
20.2.78 NMAC Emission Standards for Hazardous Air Pollutants	X		
40 CFR 61, Subpart M, Asbestos	X		
40 CFR 80, Subparts A, B, & C	X		Not applicable under Title V

1. Not Applicable For This Facility: No existing or planned operation/activity at this facility triggers the applicability of these requirements.
2. No Requirements: Although these regulations may apply, they do not impose any specific requirements on the operation of the facility as described in this permit.

C. Compliance with the terms and conditions of this permit regarding source emissions and operation demonstrate compliance with national ambient air quality standards specified at 40 CFR 50, which were applicable at the time air dispersion modeling was performed for the facility's NSR Permit 1517-M5.

A104 Facility: Regulated Sources

A. Table 104.A lists the emission units authorized for this facility. Emission units identified as insignificant or trivial activities (as defined in 20.2.70.7 NMAC) and/or equipment not regulated pursuant to the Act are not included.

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
~~14001~~	~~External Combustion Heater, Building 199~~	~~Hastings/ L-240-105-8628~~	~~41794-2~~	~~8.628 MMBtu/hr~~	~~1992~~
~~14002~~	~~External Combustion Heater, Building 199~~	~~Hastings/ L-240-105-8628~~	~~41793-2~~	~~8.628 MMBtu/hr~~	~~1992~~
~~14003~~	~~External Combustion Heater, Building 199~~	~~Rapids SA Series/ SA89~~	~~919112~~	~~8.25 MMBtu/hr~~	~~1992~~
~~14004~~	~~External Combustion Heater, Building 199~~	~~Rapids SA Series/ SA89~~	~~919114~~	~~8.25 MMBtu/hr~~	~~1992~~
14007	External Combustion Heater, Building 4607	Camus/ ~~Force~~ Dyna Force Series	52029492~~O4 1215453~~	5.0 MMBtu/hr	1/29/ 2021~~10/15/2012~~
14008	External Combustion Heater, Building 4607	Camus/ ~~Force~~ Dyna Force Series	5202949~~311 1114765~~	5.0 MMBtu/hr	1/29/ 2021~~10/15/2012~~
14009	External Combustion Heater, Building 4607	Camus/ ~~Force~~ Dyna Force Series	5202949~~111 1114766~~	5.0 MMBtu/hr	1/29/ 2021~~10/15/2012~~
14010	External Combustion Heater, Building 4608	HYDRO ENGINEERING/ ~~EHGV~~ 4/3000 /EHGV	13090075	0.~~36~~ 31 MMBtu/hr	6/30/2014
14011	Parachute Drying Tower Heater, Building 680	Rupp Air Systems / CFA-M12	1858977	0.525 MMBtu/hr	Aug 2015

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
14012	Paint Booth Heater, Building 4607	~~Weather-Rite~~Global Finishing Solutions / RAM 25 ~~H2~~	U28183A/16 56485	2.0 MMBtu/hr	01/02/2013~~10/15/2012~~
14013	External Combustion Heater, Building 4608	HYDRO ENGINEERING/ ~~EHGV-~~4/3000 /EHGV	13090076	0.~~36~~31 MMBtu/hr	6/30/2014
14014	External Combustion Heater, Building 375	N/A	N/A	1.03 MMBtu/hr	1968
15001	Fuel Dispensing for Tanks 22001 and 22002	Not Reported	Not Reported	1,212,924 gal/yr	May 2009
~~15002~~	~~Fuel Dispensing for Tank 22003~~	~~Not Reported~~	~~Not Reported~~	~~51,000 gal/yr~~	~~4/5/2014~~
15003	Fuel Dispensing for Tanks 22004, 22005, and 22006	Not Reported	Not Reported	6,387,500 gal/yr	1992
16001	Gasoline Fuel Distribution	Not Reported	Not Reported	~~27,810~~65,000 gal/yr	2009
19001	RICE - Fire Pump Engine - Bldg. 127	Cummins / NT855F4	11525127	320 hp	9/1/1990
19002	RICE - Fire Pump Engine - Bldg. 127	Cummins / NT855F4	11511938	320 hp	9/1/1990
19003	RICE - Fire Pump Engine - Bldg. 127	Detroit / DDFPT6ATLH-7089	6A-466521	~~315~~302 hp	8/1/1991
19004	RICE - Fire Pump Engine - Bldg. 160	John Deere / 6068HFC48B	PE6068L226 144	224 hp	2013
19005	RICE - Fire Pump Engine - Bldg. 179	Cummins / 6CTA8.3-G2	46885442	~~252~~277 hp	12/7/2009
19006	RICE - Fire Pump Engine - Bldg. 179	Cummins / 6CTA8.3-G2	46876079	~~252~~277 hp	12/7/2009
19007	RICE - Fire Pump Engine - Bldg. 200	Caterpillar / 3306BD1	64Z08130	231 hp	10/1/1990
19008	RICE - Fire Pump Engine - Bldg. 200	Caterpillar / 3306BD1	64Z08332	231 hp	10/1/1990
19009	RICE - Fire Pump Engine - Bldg. 233	Detroit / DDFP-04AT-R7239	4A-285965	~~216~~228 hp	8/20/1992

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
19010	RICE - Fire Pump Engine - Bldg. 845	John Deere / 4045TF290~~C~~	PE4045R938448	74 hp	6/4/2014
19013	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar / 3208 DIT	03Z12543	235 hp	2/20/1996
19014	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar / 3208 DIT	03Z12547	235 hp	2/20/1996
19015	RICE - Fire Pump Engine - Bldg. 3208	Caterpillar / 3208 DIT	03Z12545	235 hp	2/20/1996
19016	RICE - Fire Pump Engine - Bldg. 74605	John Deere / 6068HFC48A	PE6068L150056	260 hp	7/1/2012
19017	RICE - Fire Pump Engine - Bldg. 74605	John Deere / 6068HFC48A	PE6068L149039	260 hp	7/1/2012
19018	RICE - Fire Pump Engine - Bldg. 74610	John Deere / 6090HFC47A,B	RG6090L117338	~~235~~ 350 hp	10/2/2014
19019	RICE - Fire Pump Engine - Bldg. 74676	John Deere / 4045HFC28~~4045HFZ8H~~	PE4045L273221	121 hp	8/14/2015
19020	RICE - Fire Pump Engine - Bldg. 1434	John Deere / 4045TF290C	PE4045R977051	37 hp	8/1/2015
19021 – ~~19023~~ 19025	RICE - Future Fire Pump Engines	TBD	TBD	TBD	TBD
19301	RICE - Emergency Generator - Bldg. 10	Cummins / 6CTA8.3-G2	46631569	252 hp	10/20/2006
19302	RICE - Emergency Generator - Bldg. 12	Caterpillar / C9	S9L00982	398 hp	10/15/2009
19303	RICE - Emergency Generator - Bldg. 77	Cummins / 4B3.9-G2	46655605	68 hp	2009
19304	RICE - Emergency Generator - Bldg. 116	Caterpillar / 3412	BPG00402	896 hp	4/25/2003
19305	RICE - Emergency Generator - Bldg. 123	Cummins / QSM11-G4 NR3	35212613	470 hp	4/14/2009
19306	RICE - Emergency Generator - Bldg. 128	Caterpillar / 3406	1DZ04164	519 hp	8/1/2003
19306	RICE - Emergency Generator - Bldg. 128	Cummins / QSB5G13	74384431	173 hp	07/01/2020
19307	RICE - Emergency Generator - Bldg. 135	Cummins / QSM11-G4 NR3	35212810	470 hp	6/24/2009
~~19308~~	~~RICE - Emergency Generator - Bldg. 158~~	~~Cummins / VTA28-G5~~	~~25283911~~	~~900 hp~~	~~7/1/2004~~

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
19308	RICE - Emergency Generator - Bldg. 158	Cummins / QSB7-G5NR3	74399398	325 hp	12/08/2021
~~19310~~	~~RICE - Emergency Generator - Bldg. 216~~	~~Cummins / 4B3.9-G2~~	~~46417261~~	~~68 hp~~	~~9/21/2004~~
19310	RICE - Emergency Generator - Bldg. 216	Kohler / KD13404TM/G1 8B	5024701830	67 hp	2/12/2021
19311	RICE - Emergency Generator - Bldg. 281	Cummins / QSB7-G3 NR3	46916691	250 hp	1/24/2012
19312	RICE - Emergency Generator - Bldg. 317	Caterpillar / C15	FSE02255	546 hp	8/25/2009
~~19313~~	~~RICE - Emergency Generator - Bldg. 336~~	~~Cummins / QSB5-G3 NR3~~	~~21844691~~	~~126 hp~~	~~11/25/2009~~
19313	RICE - Emergency Generator - Bldg. 336	Kubota / V2203-M-BG-ET02	7JH1743	36 hp	08/01/2019
19314	RICE - Emergency Generator - Bldg. 337	Cummins / QSL9-G3 NR3	46899227	399 hp	8/19/2008
~~19315~~	~~RICE - Emergency Generator - Bldg. 356~~	~~Kubota / V2203-BG-ES~~	~~05L6027~~	~~37 hp~~	~~9/13/2005~~
19315	RICE - Emergency Generator - Bldg. 356	Cummings / 4BT3.3G5	72043010	69 hp	08/01/2019
19316	RICE - Emergency Generator - Bldg. 575	Caterpillar / 3412	BPG02452	~~823~~ 913 hp	6/30/2005
19317	RICE - Emergency Generator - Bldg. 600	Cummins / QSB5-G3 NR3	21844697	126 hp	8/25/2008
19318	RICE - Emergency Generator - Bldg. 620	Caterpillar / 3054C	E4M02853	~~168~~ 158 hp	4/29/2009
19319	RICE - Emergency Generator - Bldg. 622	Caterpillar / C27	MJE01219	1214 hp	8/15/2012
19320	RICE - Emergency Generator - Bldg. 724	Caterpillar / C9	S9L02284	398 hp	1/10/2012
19321	RICE - Emergency Generator - Bldg. 724	Caterpillar / C15	FTE00826	~~568~~ 865 hp	5/1/2013
~~19322~~	~~RICE - Emergency Generator - Bldg. 728~~	~~Cummins / 6CTA8.3-G2~~	~~46317176~~	~~201 hp~~	~~2/5/2004~~
19322	RICE - Emergency Generator - Bldg. 728	Kohler / KD13404TM/G1 8	4718502540	94 hp	11/11/2020
19324	RICE - Emergency Generator - Bldg. 777	Cummins / QSX15-G9 NR2	79503419	755 hp	11/1/2013
19325	RICE - Emergency Generator - Bldg. 777	Cummins / QSX15-G9 NR2	~~4~~79503421	755 hp	11/1/2013

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
19326	RICE - Emergency Generator - Bldg. 777	Cummins / QSX15-G9 NR2	79544951	755 hp	11/1/2013
~~19327~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins / QSK23-G7 NR2~~	~~00316558~~	~~1220 hp~~	~~9/15/2008~~
~~19328~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins / QSK23-G7 NR2~~	~~00316531~~	~~1220 hp~~	~~9/15/2008~~
~~19329~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins / QSK23-G7 NR2~~	~~00316469~~	~~1220 hp~~	~~9/15/2008~~
~~19330~~	~~RICE - Emergency Generator - Bldg. 780~~	~~Cummins / QSK23-G7 NR2~~	~~00316723~~	~~1220 hp~~	~~9/15/2008~~
19331	RICE - Emergency Generator - Bldg. 790 (UPS)	Cummins / QSX15-G9	79419742	755 hp	2/25/2011
19332	RICE - Emergency Generator - Bldg. 848	Volvo Penta / TWD1643GE	D16*069497 *C3*A	917 hp	12/1/2013
19333	RICE - Emergency Generator - Bldg. 848	Volvo Penta / TWD1643GE	D16*069803 *C3*A	917 hp	12/1/2013
19334	RICE - Emergency Generator - Bldg. 848	Volvo Penta / TWD1643GE	D16*069804 *C3*A	917 hp	12/1/2013
19335	RICE - Emergency Generator - Bldg. 848	Volvo Penta / TWD1643GE	D16*069327 *C3*A	917 hp	12/1/2013
19338	RICE - Emergency Generator - Bldg. 2134	Cummins / QSB5-G3 NR3	46940148	145 hp	4/1/2009
19339	RICE - Emergency Generator - Bldg. 2300	Kubota / F2803-EBG	1J0400	~~34~~ 45 hp	3/13/2002
~~19340~~	~~RICE - Emergency Generator - Bldg. 2302~~	~~Kubota / F2803~~	~~1J1294~~	~~34 hp~~	~~3/7/2002~~
19340	RICE - Emergency Generator - Bldg. 2302	Cummings / 4BT3.3G5	72042999	69 hp	8/1/2019
19341	RICE - Emergency Generator - Bldg. 2358 (DASR)	John Deere / 4045HF285	PE4045L099 988	~~158~~ 139 hp	5/15/2012
19342	RICE - Emergency Generator - Bldg. 2360	Cummins / QSB5-G3 NR3	46738406	145 hp	7/16/2007
19343	RICE - Emergency Generator - Bldg. 2373	Cummins / QSX15-G9	79393155	755 hp	2/4/2010

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
19344	RICE - Emergency Generator - Bldg. 3010	Perkins / CM51035	U219524M	27 hp	1/11/2006
19345	RICE - Emergency Generator - Bldg. 3033	Perkins / CM51035	U218926L	27 hp	1/11/2006
19347	RICE - Emergency Generator - Bldg. 3060	Kubota / D1703-M-BG-ET01	7JS7930~~01C0107~~	~~20~~ 27 hp	6/18/2021~~6/23/2003~~
19356	RICE - Emergency Generator - Bldg. 4085	MT-DD (Detroit Diesel) / 12V2000G85-TB	5352011323	1193 hp	7/1/2013
19357	RICE - Emergency Generator - Bldg. 4086	Perkins / YD51206	U838110L	168 hp	4/12/2005
19358	RICE – Emergency Generator – Bldg. 4606	Cummins / QSB5-G3 NR3	73315969	145 hp	5/1/2013
19359	RICE – Emergency Generator – Bldg. 4607	Cummins / QSB7-G3 NR3	73314473	324 hp	2/1/2013
19360	RICE - Future Emergency Generator - Bldg. 4619	TBD	TBD	TBD	TBD
19361	RICE – Emergency Generator – Bldg. 4734	V3300-BG-ET01	2DE1903	49 hp	12/1/2013
19362	RICE - Emergency Generator - Bldg. 5038	Cummins / QSL9-G2 NR3	46875394	364 hp	2008
19363	RICE - Emergency Generator - Bldg. 9971	Cummins / 6BT5.9-G6	46251765	170 hp	10/4/2004
19364	RICE - Emergency Generator - Bldg. 9973	Cummins / 6CTA8.3-G2	46654695	252 hp	10/19/2006
19365	RICE - Emergency Generator - Bldg. 74618	Cummins / QSX15-G9	79606085	755 hp	~~8~~/19/2012
19366	RICE - Emergency Generator - Bldg. ~~AOS Tower~~2295	Kohler / KDI3404TM/G18B~~40RE0ZK~~	4715902850	67 hp	11/2017

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date [1]
19367	RICE - Emergency Generator - Bldg. 4904	Cummins / QSX15-G9	80069558	755 hp	5/2019
19368	RICE - Emergency Generator - Bldg. 102	John Deere / 6068HF285	PE6068N013303	237 hp	9/4/2020
19369	RICE - Emergency Generator - Bldg. 3050	Kholer / KDI2504ESM	4433801480	39.9 hp	5/14/2021
~~19367~~ 19370 - 1937~~5~~9	RICE -Future Emergency Generator	TBD	TBD	TBD	TBD
21003	Paint Booth, Building 375	Miscellaneous Parts	TBD	NA	01/1968
21005	Aircraft Paint Booth, Building 4607	Miscellaneous Parts	TBD	NA	12/2012
21006	Parts Paint Booth, Building 4607	Global Finishing Solutions/ IDB-3012	TBD	NA	12/2012
22001	E-85 Storage Tank 313	TESCA/ STI-F911 UL-142	Not Reported	12,000 gallons	5/2009
22002	Gasoline Storage Tank 314	TESCA/ STI-F911 UL-142	Not Reported	12,000 gallons	5/2009
~~22003~~	~~Gasoline Storage Tank 374~~	~~TBD~~	~~Not Reported~~	~~300 gallons~~	~~4/25/2014~~
22004	Gasoline Storage Tank 1111R	TBD	Not Reported	10,000 gallons	1/2014
22005	Gasoline Storage Tank 1111M	TBD	Not Reported	10,000 gallons	1/2014
22006	Gasoline Storage Tank 1111P	TBD	Not Reported	10,000 gallons	1/2014
31999	Miscellaneous Chemical Use	NA	Not Reported	NA	NA

All TBD (to be determined) units and like-kind engine replacements must be evaluated for applicability to NSPS and MACT requirements.

[1] Construction Date is synonymous with Installation Date.

A105 Facility: Control Equipment

A. Table 105.A lists all the pollution control equipment required for this facility. Each emission point is identified by the same number that was assigned to it in the permit application.

Table 105.A: Control Equipment List:

Control Equipment Unit No.	Control Description	Pollutant being controlled	Control for Unit Number[1]
21003	Paint Booth Filters	PM, including some HAP and TAP species.	21003
21005	Paint Booth Filters	PM, including some HAP and TAP species.	21005
21006	Paint Booth Filters	PM, including some HAP and TAP species.	21006

1 Control for unit number refers to a unit number from the Regulated Equipment List

A106 Facility: Allowable Emissions

A. The following Section lists the emission units, and their allowable emission limits. (40 CFR 50, 40 CFR 60, Subparts A & IIII, 40 CFR 63, Subparts A, ZZZZ, BBBBBB & CCCCCC (6-C), Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC and NSR Permits 1517M5R1, & M5R2).

Table 106.A: Allowable Emissions

Unit No.	Source Category (Section No.)	NO_x[1] tpy	CO tpy	VOC tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	HAP* tpy
~~14001 – 14004,~~ 14007 – 14014	External Combustion (A601)	~~21.5~~8.2	~~18.0~~6.9	~~1.2~~0.5	~~0.1~~0.05	~~1.6~~0.63	~~1.6~~0.63	*
15001~~,~~ – 15003	Fuel Dispensing (A602A)	-	-	44.~~8~~5	-	-	-	*
22001, 22002, 22004 - 22006	Fuel Storage Tanks (A602C)	-	-	~~9.9~~12.2	-	-	-	*
21003, 21005, 21006	Surface Coating – Paint Booths (A603)	-	-	~~27.5~~26.9	-	0.9	0.5	*

Unit No.	Source Category (Section No.)	NO_x[1] tpy	CO tpy	VOC tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	HAP* tpy
19001 - 190~~23~~10, 19013-19025, 19301-~~—~~ 19308, 19310-19322, 19324-19326, 19331-19335, 19338-19345, 19347, 19356 - 1937~~5~~9	Internal Combustion (A604)	~~110.0~~94.8	~~54.4~~50.4	14.~~2~~1	9.~~2~~8	~~5.2~~4.5	~~5.2~~4.5	*
31999	Miscellaneous Chemical Use (A605)	-	-	-	-	-	-	*
16001	Gasoline Distribution	-	-	0.~~1~~16	-	-	-	*
Total (ton/yr)[2]		**~~131.5~~103.0**	**~~72.4~~57.4**	**~~97.6~~98.4**	**9.~~3~~8**	**~~7.7~~6.1**	**~~7.3~~5.7**	* 9.9 per individual / 24.9 combined HAP

1 Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO_2.
2 Title V annual fee assessments are based on the sum of allowable tons per year emission limits in Sections A106 and A107.
3 To report excess emissions for sources with no pound per hour and/or ton per year emission limits, see condition B110.E.
"-" indicates the application represented emissions as not expected for this pollutant.
"<" indicates that the application represented the uncontrolled mass emission rates are less than 1.0 pph or 1.0 tpy for this emissions unit and this air pollutant. The Department determined that allowable mass emission limits were not required for this unit and this pollutant.
"*" indicates individual and category tons per year are included in the facility-wide CAPs of 9.9 per individual and 24.9 combined HAP.

B. Individual HAP and Total HAP emissions are limited from the entire facility to 9.9 and 24.9 tons per year, respectively.

A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM)

A. Separate allowable startup, shutdown, and maintenance (SSM) emission limits are not required for this facility since the SSM emissions are predicted to be less than the limits established in Table 106.A. The permittee shall maintain records in accordance with Condition B109.E.

A108 Facility: Hours of Operation

A. Except for limits on annual operating hours, this facility is authorized for continuous operation. Monitoring, recordkeeping, and reporting are not required to demonstrate compliance with continuous hours of operation.

A109 Facility: Reporting Schedules

A. A Semi-Annual Report of monitoring activities is due within 45 days following the end of every 6-month reporting period. The 6-month reporting periods start on October 1st and April 1st of each year.

B. The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on October 1st of each year.

A110 Facility: Fuel and Fuel Sulfur Requirements

A. Fuel and Fuel Sulfur Requirements (All external combustion units in Table 104.A)

Requirement: All external combustion emission units listed in Table 104.A shall fire only natural gas containing no more than 0.2 grains of total sulfur per 100 dry standard cubic feet. (NSR Permit 1517M5R1, Condition A110.A and revised in permit P119R1M3)
Monitoring: The use of natural gas fuel, as defined in this permit, shall constitute compliance with this permit condition.
Recordkeeping: The permittee shall demonstrate compliance with the natural gas limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying the allowable limit or less.
Reporting: The permittee shall report in accordance with Section B110.

A111 Facility: 20.2.61 NMAC Opacity

B. 20.2.61 NMAC Opacity Limit (All external combustion units)

Requirement: Visible emissions from all external stationary combustion emission stacks shall not equal or exceed an opacity of 20 percent in accordance with the requirements at 20.2.61.109 NMAC. (NSR Permit 1517M5R1, Condition A111.A and revised in permit P119R1M3)
Monitoring: Use of natural gas fuel constitutes compliance with 20.2.61 NMAC unless opacity equals or exceeds 20% averaged over a 10-minute period. When any visible emissions are observed during operation other than during startup mode, opacity shall be measured over a 10-minute period, in accordance with the procedures at 40 CFR 60, Appendix A, Reference Method 9 (EPA Method 9) as required by 20.2.61.114 NMAC, or the operator will be allowed to shut down the equipment to perform maintenance/repair to eliminate the visible emissions.

Following completion of equipment maintenance/repair, the operator shall conduct visible emission observations following startup in accordance with the following procedures: (a) Visible emissions observations shall be conducted over a 10-minute period during operation after completion of startup mode in accordance with the procedures at 40 CFR 60, Appendix A, Reference Method 22 (EPA Method 22). If no visible emissions are observed, no further action is required. (b) If any visible emissions are observed during completion of the EPA Method 22 observation, subsequent opacity observations shall be conducted over a 10-minute period, in accordance with the procedures at EPA Method 9 as required by 20.2.61.114 NMAC. For the purposes of this condition, *Startup mode* is defined as the startup period that is described in the facility's startup plan.
Recordkeeping: If no visible emissions were observed, none. If any visible emissions observations were conducted, the permittee shall keep records in accordance with the requirements of Section B109 and as follows: (a) For any visible emissions observations conducted in accordance with EPA Method 22, record the information on the form referenced in EPA Method 22, Section 11.2. (b) For any opacity observations conducted in accordance with the requirements of EPA Method 9, record the information on the form referenced in EPA Method 9, Sections 2.2 and 2.4.
Reporting: The permittee shall report in accordance with Section B110.

C. 20.2.61 NMAC Opacity Limit (Emergency and fire pump engines)

Requirement: Visible emissions from all compression ignition stationary combustion emission stacks shall not equal or exceed an opacity of 20 percent in accordance with the requirements at 20.2.61.109 NMAC.
Monitoring: 1) For compression ignition engines that are used to generate facility power and/or used for facility processing and are not emergency, black start, or limited use engines as defined at 40 CFR 63, Subpart ZZZZ, the permittee shall, at least once every 90 days of operation, perform an opacity measurement on each Unit for a minimum of 10 minutes in accordance with the procedures of 40 CFR 60, Appendix A, Reference Method 9. 2) For emergency, standby, or limited use compression ignition engines, the permittee shall, at least once every calendar year during routine maintenance startup, an opacity measurement shall be performed on each Unit for a minimum of 10 minutes in accordance with the procedures of 40 CFR 60, Appendix A, Reference Method 9. The permittee shall also measure opacity on a Unit's emissions stack when any visible emissions are observed during steady state operation.

3) Alternatively, for any compression ignition engine, if visible emissions are observed during steady state operation, within 1 hour of seeing visible emissions, the permittee shall shut down the engine and perform maintenance and/or repair to eliminate the visible emissions. Following completion of equipment maintenance/repair, the operator shall perform visible emission observations following startup in accordance with the following procedures:

(a) Visible emissions observations shall be conducted over a 10-minute period during operation after completion of startup mode in accordance with the procedures for opacity in accordance with 40 CFR 60, Appendix A, Reference Method 22. If no visible emissions are observed, no further action is required.

(b) If any visible emissions are observed during completion of the Reference Method 22 observation, subsequent opacity observations shall be measured over a 10-minute period, in accordance with the procedures at 40 CFR 60, Appendix A, Reference Method 9 as required by 20.2.61.114 NMAC.

For the purposes of this condition, *Startup mode* is defined as the startup period that is described in the facilities startup plan.

Recordkeeping:

If any visible emissions observations were conducted, the permittee shall keep records in accordance with the requirements of Section B109 and as follows:

(a) For any visible emissions observations conducted in accordance with EPA Method 22, record the information on the form referenced in EPA Method 22, Section 11.2.

(b) For any opacity observations conducted in accordance with the requirements of EPA Method 9, record the information on the form referenced in EPA Method 9, Sections 2.2 and 2.4.

(c) For each emergency, black start, and limited use compression ignition engine, the permittee shall also record the number of operating hours per year of each Unit and the reason for operating the unit.

Reporting: The permittee shall report in accordance with Section B110.

A112 Alternative Operating Scenario – Not Required

A113 Compliance Plan – Not Required

A114 Reducing Facility Emissions – Not Required

A115 Facility Area Source HAP Compliance Demonstration

A. Facility Area Source HAP Compliance Demonstration

Requirement: All Hazardous Air Pollutants (HAP) emissions listed at Section 112 of CAA and subsequently revised at 40 CFR 63, Subpart C from Cannon AFB shall not exceed 9.9 tons per year of any individual hazardous air pollutant and 24.9 tons per year of all hazardous pollutants combined. All regulated stack and fugitive HAP emissions from all regulated units in Table 104.A and all Title V insignificant stationary sources of HAPs shall be included in this limit. (NSR Permit 1517M5R1, Condition A605.A and revised in this permit)
Monitoring: Monthly, the permittee shall calculate the monthly rolling 12-month total HAPs emissions (stack and fugitive) from all Title V regulated equipment.
Recordkeeping: The permittee shall make a record of a monthly rolling 12-month of individual and total HAPs calculation, and include the following information in the record in accordance with the requirements of Section B109: (a) a description of the calculation methodology; (b) the electronic MS-Excel spreadsheet or Air Force database containing all calculations; (c) the results of the monthly HAPs (individual and total) calculations; (d) the emission factors relied upon in the calculation; (e) the date of the calculation; and (f) the unit numbers of all equipment represented by these calculations.
Reporting: The permittee shall report in accordance with Section B110.

A116 Facility: Open Burning Requirements

A. Open Burning Requirements (All Fire Fighting Training Projects)

Requirement: The permittee shall comply with the burning of materials and structures for firefighting training requirements in accordance with 20.2.60.112 NMAC shown here: Burning of structures, buildings, facilities or materials for purposes of instruction and training of bona fide firefighting and fire-rescue personnel is allowed, provided that: (a) all regulated asbestos-containing material is removed prior to burning, in accordance with 40 CFR 61, Subpart M (National Emission Standard for Asbestos); and (b) the department is notified, prior to burning, via email or regular mail.
Monitoring: None. Compliance is demonstrated through records.
Recordkeeping: The permittee shall demonstrate compliance with 20.2.60.112 NMAC by maintaining records of documents (such as emails or letters) submitted to the Department for every firefighting training project/exercise in accordance with the requirements of Section B109.
Reporting: The permittee shall report in accordance with Section B110.

EQUIPMENT SPECIFIC REQUIREMENTS

A200 Oil and Gas Industry – Not Required

A300 Construction Industry – Not Required

A400 Power Generation Industry – Not Required

A500 Solid Waste Disposal (Landfills) Industry– Not Required

A600 Cannon Air Force Base

A601 External Combustion

A. Fuel Usage (Units ~~14001, 14002, 14003, 14004,~~ 14007, 14008, 14009, 14010, 14011, 14012, 14013, and 14014)

Requirement: Total natural gas throughput for external combustion units ~~14001, 14002, 14003, 14004, 14007,~~ 14008, 14009, 14010, 14011, 14012, 13, and 14014 shall not exceed ~~429.42~~164.68 million scf/yr. Compliance with this throughput limitation demonstrates compliance with the allowable emissions for these units in Table 601.A and also Table 106.A except for HAPs. (NSR Permit 1517M5R1, Condition A601.A and revised)
Monitoring: The permittee shall monitor the monthly and monthly rolling 12-month total throughput of natural gas for all external combustion units listed in Table 104.A.
Recordkeeping: The permittee shall calculate and record the total monthly and monthly rolling 12-month total of natural gas throughput for all external combustion units listed in Table 104.A in accordance with Section B109 of this permit.
Reporting: In accordance with Section B110 of this permit.

Table 601.A Allowable Emissions for External Combustion Units

Unit No.	NO_x[1] tpy	CO tpy	VOC pph	VOC tpy	PM_{10} pph	PM_{10} tpy	$PM_{2.5}$ pph	$PM_{2.5}$ tpy
~~14001~~	~~3.5~~	~~2.9~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~
~~14002~~	~~3.5~~	~~2.9~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~
~~14003~~	~~3.3~~	~~2.8~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~
~~14004~~	~~3.3~~	~~2.8~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~	~~≤~~
14007	2.~~0~~1	1.~~7~~8	<	<	<	<	<	<
14008	2.~~0~~1	1.~~7~~8	<	<	<	<	<	<
14009	2.~~0~~1	1.~~7~~8	<	<	<	<	<	<

Unit No.	NO_x[1] tpy	CO tpy	VOC pph	VOC tpy	PM_{10} pph	PM_{10} tpy	$PM_{2.5}$ pph	$PM_{2.5}$ tpy
14010	<	<	<	<	<	<	<	<
14011	<	<	<	<	<	<	<	<
14012	<	<	<	<	<	<	<	<
14013	<	<	<	<	<	<	<	<
14014	<	<	<	<	<	<	<	<

1 Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO_2.
"<" indicates the application represented emissions are less than 1.0 pph or 1.0 tpy for this pollutant.

A602 Fuel Dispensing and Fuel Storage Tanks

A. Units 15001, 15002, and 15003

Requirement:

1) Total fuel dispensed shall not exceed the following:

~~(a)~~ Unit 15001 shall not exceed 1,212,924 gallons per year.

~~(b)~~(a)~~Unit 15002 shall not exceed 51,000 gallons per year.~~

~~(c)~~(b)Unit 15003 shall not exceed 6,387,500 gallons per year.

2) Compliance with the throughput limitations demonstrates compliance with the allowable VOC emission limits in Tables 602.A and 106.A, except for HAPs for these units. (NSR Permit 1517M5R1, Condition A602.A and revised)

Monitoring: The permittee shall monitor the monthly and monthly rolling 12-month total amount of fuel dispensed from units 15001, ~~15002,~~ and 15003.

Recordkeeping: The permittee shall calculate and record the monthly and monthly rolling 12-month total of fuel dispensed for each unit in accordance with Section B109 of this permit.

Reporting: In accordance with Section B110 of this permit.

Table 602.A Allowable Emissions for Fuel Dispensing and Fuel Storage Tanks

Unit No.	NO_x[1] tpy	CO tpy	VOC pph	VOC tpy	PM_{10} pph	PM_{10} tpy	$PM_{2.5}$ pph	$PM_{2.5}$ tpy
15001, ~~15002,~~15003[2]	-	-	10.2	44.~~8~~5	-	-	-	-

1 Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO_2.
2 Represents total emissions from the source category made of the group of units.
"-" indicates emissions of this pollutant are not expected.

B. 40 CFR 63 Subpart CCCCCC Applicability to Gasoline Dispensing Facilities and Associated Gasoline Storage Tanks

Requirement: Units 15001, ~~15002,~~ 15003, 22001, 22002, ~~22003,~~ 22004, 22005, and 22006 are subject to federal NESHAP found in 40 CFR 63, Subpart A – General Provisions, and Subpart CCCCCC – NESHAP for Gasoline Dispensing Facilities and shall comply with both the notification requirements in Subpart A and with the specific requirements of Subpart CCCCCC.

(a) Units 15003, 22004, 22005, and 22006 must comply with the requirements in §63.11118.

(b) Units 15001, ~~15002,~~ 22001, and 22002~~, and 22003~~ must comply with §63.11116.

(NSR Permit 1517M5R1, Condition A602.B and revised in permit P119R1M3)

Monitoring: The permittee shall comply with all applicable monitoring requirements of 40 CFR 63, Subparts A and CCCCCC.

Recordkeeping: The permittee shall comply with all applicable recordkeeping requirements of 40 CFR 63, Subparts A and CCCCCC.

Reporting: The permittee shall comply with all applicable reporting requirements of 40 CFR 63, Subparts A and CCCCCC.

C. Throughput Limitations for Units 22001, 22002, 22003, 22004, 22005, 22006

Requirement:

1) Total throughput for the fuel storage tanks shall not exceed the following:

(a) Units 22001 and 22002 shall each not exceed 606,462 gallons each per year;

~~(b) Unit 22003 shall not exceed 51,000 gallons per year;~~

~~(c)~~(b) Unit 22004 shall not exceed 3,650,000 gallons per year;

~~(d)~~(c) Unit 22005 shall not exceed 1,825,000 gallons per year;

~~(e)~~(d) Unit 22006 shall not exceed 912,500 gallons per year; and

2) Compliance with this throughput limitation demonstrates compliance with the allowable emission limits in Table 106.A except for HAPs for these units. (NSR Permit 1517M5R1, Condition A602.C and revised in permit P119R1M3)

Monitoring: The permittee shall monitor the monthly and monthly rolling 12-month total throughput for each storage tank.

Recordkeeping: The permittee shall keep records of the amount of fuel delivered to each storage tank. The permittee shall calculate the total throughput for each month and the monthly rolling 12-month total in accordance with Section B109 of this permit.

Reporting: The permittee shall report in accordance with Section B110.

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A603 Surface Coating – Paint Booths

A. Allowable Emissions for Paint Booths (revised in permit P119R~~2~~3)

Paint Booths	VOC		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
21003	83.16	8.78	~~3.95~~4.88	0.5~~1~~2	~~3.31~~2.83	0.30
21005 & 21006	~~199.93~~172.34	18.~~47~~16	2.~~39~~44	~~0.039~~0.39	1.~~48~~51	0.~~0~~24

B. Limits on usage for Units 21003, 21005, 21006

Requirement: The permittee shall not exceed the following hourly and annual usage rates. The usage rates are derived from a master materials list of materials used at the facility, assigned an SDS #, and submitted as part of the air permit application. Compliance with the usage rates shall be demonstrated by cross-referencing the master materials list and SDS # with the usage records. General usage rates are provided by paint booth and material type, and the more restrictive usage limitations are given in parentheses. Compliance with the maximum hourly and annual usage rates demonstrates compliance with the allowable emission limits in Table A603.A for these units. (NSR Permit 1517M5R1, Condition A603.A and revised in this permit)

Unit No.	Material	Maximum Hourly and Annual Usage	Control
21003	Paint/Solvent	General usage rates shall be limited to: 12 gal/hr and 2,535 gal/yr (SDS# ~~1~~202~~,~~; ~~2~~207~~,~~; 208~~7~~; 215a,b; 300 = ~~1000~~ 3 gal/~~yr~~ hr each)	Paint Booth Filter
21005 and 21006	Paint/Solvent	General usage rates shall be limited to: 15 gal/hr and 4,800 gal/yr ~~(SDS# 34a,b; 47a,b; 49a,b; 61; 107a,b = 1 gal/hr)~~ (SDS# 3a,b; 5a,b; 9a,b; ~~10~~51a,b; ~~14~~86a,b; ~~15a,b~~89; ~~29~~14a,b; ~~51a,b; 89a,b; 92a,b;~~ 214a,b; 216a,b; 217a,b; ~~218a,b; 219a,b;~~ 220a,b; 224a,b; 225a,b; 226a,b; 228a,b; ~~229a,b;~~ 230a,b; 231a,b; ~~232a,b; 233a,b; 234a,b;~~ 235a,b; 238a,b; ~~239a~~302a,b; 304a,b; 314a,b; 316a,b = 3 gal/hr) (MSDS# 3b~~, 20b, 88~~ = 2000 gal/yr ~~each~~)	Paint Booth Filter
	Non-spray	General usage rates shall be limited to: 10 gal/hr and 900 gal/yr ~~(SDS# 239a,b = 5 gal/hr)~~ ~~(SDS# 1, 25 = 450 gal/yr each)~~	
	Aerosol	2 gal/hr and 300 gal/yr	
Monitoring:			

1) The permittee shall monitor the usage of each material that is a source of VOC, HAP, or particulate matter emissions from surface coating operations; 2) The permittee shall continuously monitor the differential pressure across each paint booth filter; and 3) Air filters will be replaced in accordance with manufacturer specifications regarding differential pressure.
Recordkeeping: 1) The permittee shall record the usage of each coating material, including any new material which shall be identified as new. Records, at a minimum, shall include the date, time, material name, SDS ID corresponding to the spreadsheets developed for application 1517M5, location of usage, and the amount of material used; 2) The permittee shall calculate the actual emission rate (tons/month) and the monthly rolling 12-month total (tons/year) for each HAP emitted, total combined HAPs and total VOCs for the previous calendar month (tons/month). This calculation shall be based on usage logs and emission factors for each material. The emission factors shall be based on the spreadsheets developed by the applicant and submitted with the application for NSR 1517M5. 3) The permittee shall calculate the actual emission rate (tons/month) and the monthly rolling 12-month total (tons/year) emission rate for particulate matter. This calculation shall be based on usage logs and the emission factors developed for NSR 1517M5R1, for each paint booth. 4) The permittee shall keep onsite a copy of the manufacturer specifications and the records for each paint booth of the date filters are changed. 5) Prior to using any new coating material, the permittee shall evaluate the material and calculate the emission factor (lb/quantity) of all the pollutants that would result from using that material. The record of the calculation shall include a copy of the information that was relied upon when making the calculation.
Reporting: The permittee shall report in accordance with Section B110.

A604 Internal Combustion Engines

~~A. Table 604.A, Internal Combustion – Emergency Generators Engine Allowable Emissions (revised in permit P119R2)~~

~~Emergency Generator Engines~~				~~PPH~~				
~~Unit ID~~	~~Building / Location~~	~~Year~~	~~Capacity (hp)~~	~~NO_x~~	~~CO~~	~~SO_x~~	~~PM/10/2.5~~	~~VOC~~
~~19001~~	~~RICE - Fire Pump Engine - Bldg. 127~~	~~1989~~	~~320~~	~~9.92~~	~~2.14~~	~~0.66~~	~~0.70~~	~~0.81~~
~~19002~~	~~RICE - Fire Pump Engine - Bldg. 127~~	~~1989~~	~~320~~	~~9.92~~	~~2.14~~	~~0.66~~	~~0.70~~	~~0.81~~
~~19003~~	~~RICE - Fire Pump Engine - Bldg. 127~~	~~1991~~	~~315~~	~~9.77~~	~~2.10~~	~~0.65~~	~~0.69~~	~~0.79~~

~~A. Table 604.A, Internal Combustion – Emergency Generators Engine Allowable Emissions (revised in permit P119R2)~~

~~Emergency Generator Engines~~				~~PPH~~				
~~Unit ID~~	~~Building / Location~~	~~Year~~	~~Capacity (hp)~~	~~NO_x~~	~~CO~~	~~SO_x~~	~~PM/10/2.5~~	~~VOC~~
~~19004~~	~~RICE – Fire Pump Engine – Bldg. 160~~	~~2012~~	~~224~~	~~1.48~~	~~1.28~~	~~0.46~~	~~0.07~~	~~0.56~~
~~19005~~	~~RICE – Fire Pump Engine – Bldg. 179~~	~~2008~~	~~252~~	~~1.67~~	~~1.44~~	~~0.52~~	~~0.22~~	~~0.64~~
~~19006~~	~~RICE – Fire Pump Engine – Bldg. 179~~	~~2008~~	~~252~~	~~1.67~~	~~1.44~~	~~0.52~~	~~0.22~~	~~0.64~~
~~19007~~	~~RICE - Fire Pump Engine - Bldg. 200~~	~~1990~~	~~231~~	~~7.16~~	~~1.54~~	~~0.47~~	~~0.51~~	~~0.58~~
~~19008~~	~~RICE – Fire Pump Engine – Bldg. 200~~	~~1990~~	~~231~~	~~7.16~~	~~1.54~~	~~0.47~~	~~0.51~~	~~0.58~~
~~19009~~	~~RICE – Fire Pump Engine – Bldg. 233~~	~~1991~~	~~216~~	~~6.70~~	~~1.44~~	~~0.44~~	~~0.48~~	~~0.54~~
~~19010~~	~~RICE - Fire Pump Engine – Bldg. 845~~	~~2014~~	~~74~~	~~0.57~~	~~0.60~~	~~0.15~~	~~0.05~~	~~0.19~~
~~19013~~	~~RICE - Fire Pump Engine - Bldg. 3208~~	~~1994~~	~~235~~	~~7.29~~	~~1.57~~	~~0.48~~	~~0.52~~	~~0.59~~
~~19014~~	~~RICE – Fire Pump Engine – Bldg. 3208~~	~~1984~~	~~235~~	~~7.29~~	~~1.57~~	~~0.48~~	~~0.52~~	~~0.59~~
~~19015~~	~~RICE – Fire Pump Engine – Bldg. 3208~~	~~1994~~	~~235~~	~~7.29~~	~~1.57~~	~~0.48~~	~~0.52~~	~~0.59~~
~~19016~~	~~RICE - Fire Pump Engine - Bldg. 74605~~	~~2011~~	~~260~~	~~1.72~~	~~1.49~~	~~0.53~~	~~0.09~~	~~0.66~~
~~19017~~	~~RICE – Fire Pump Engine - Bldg. 74605~~	~~2010~~	~~260~~	~~1.72~~	~~1.49~~	~~0.53~~	~~0.09~~	~~0.66~~
~~19018~~	~~RICE – 74610 Fire Pump Engines~~	~~2013~~	~~235~~	~~1.55~~	~~1.35~~	~~0.48~~	~~0.08~~	~~0.59~~
~~19019~~	~~RICE – 74676 Fire Pump Engines~~	~~2015~~	~~121~~	~~0.80~~	~~0.99~~	~~0.25~~	~~0.06~~	~~0.30~~
~~19020~~	~~RICE - Fire Pump Engine - Bldg. 1434~~	~~2015~~	~~37~~	~~0.46~~	~~0.05~~	~~0.08~~	~~0.02~~	~~0.09~~
~~19021 – 19023~~	~~RICE – Future Fire Pump Engines~~	~~-~~	~~500 (each)[6]~~	~~9.92~~	~~8.60~~	~~3.08~~	~~0.50~~	~~3.78~~
~~19301~~	~~RICE – Emergency Generator – Bldg. 10~~	~~2006~~	~~252~~	~~3.83~~	~~4.72~~	~~0.52~~	~~0.22~~	~~0.64~~
~~19302~~	~~RICE - Emergency Generator – Bldg. 12~~	~~2007~~	~~398~~	~~2.63~~	~~2.3~~	~~0.82~~	~~0.13~~	~~1.00~~
~~19303~~	~~RICE - Emergency Generator - Bldg. 77~~	~~2006~~	~~68~~	~~1.03~~	~~0.45~~	~~0.14~~	~~0.15~~	~~0.17~~
~~19304~~	~~RICE – Emergency Generator – Bldg. 116~~	~~2003~~	~~896~~	~~21.50~~	~~4.93~~	~~0.01~~	~~0.63~~	~~0.57~~
~~19305~~	~~RICE – Emergency Generator – Bldg. 123~~	~~2007~~	~~470~~	~~3.11~~	~~2.7~~	~~0.96~~	~~0.16~~	~~1.18~~
~~19306~~	~~RICE - Emergency Generator - Bldg. 128~~	~~2002~~	~~519~~	~~16.09~~	~~3.47~~	~~1.06~~	~~1.14~~	~~1.31~~

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~~A. Table 604.A, Internal Combustion – Emergency Generators Engine Allowable Emissions (revised in permit P119R2)~~

~~Emergency Generator Engines~~				~~PPH~~				
~~Unit ID~~	~~Building / Location~~	~~Year~~	~~Capacity (hp)~~	~~NO_x~~	~~CO~~	~~SO_x~~	~~PM/10/2.5~~	~~VOC~~
~~19307~~	~~RICE - Emergency Generator - Bldg. 135~~	~~2007~~	~~470~~	~~3.11~~	~~2.7~~	~~0.96~~	~~0.16~~	~~1.18~~
~~19308~~	~~RICE - Emergency Generator - Bldg. 158~~	~~2003~~	~~900~~	~~21.60~~	~~4.95~~	~~0.01~~	~~0.63~~	~~0.58~~
~~19310~~	~~RICE - Emergency Generator - Bldg. 216~~	~~2004~~	~~68~~	~~2.11~~	~~0.45~~	~~0.14~~	~~0.15~~	~~0.17~~
~~19311~~	~~RICE - Emergency Generator - Bldg. 281~~	~~2008~~	~~250~~	~~1.65~~	~~1.43~~	~~0.51~~	~~0.08~~	~~0.63~~
~~19312~~	~~RICE - Emergency Generator - Bldg. 317~~	~~2008~~	~~546~~	~~3.61~~	~~3.1~~	~~1.12~~	~~0.18~~	~~1.38~~
~~19313~~	~~RICE - Emergency Generator - Bldg. 336~~	~~2008~~	~~126~~	~~0.83~~	~~1.03~~	~~0.26~~	~~0.06~~	~~0.32~~
~~19314~~	~~RICE - Emergency Generator - Bldg. 337~~	~~2008~~	~~399~~	~~2.64~~	~~2.3~~	~~0.82~~	~~0.13~~	~~1.01~~
~~19315~~	~~RICE - Emergency Generator - Bldg. 356~~	~~2005~~	~~37~~	~~1.15~~	~~0.25~~	~~0.08~~	~~0.08~~	~~0.09~~
~~19316~~	~~RICE - Emergency Generator - Bldg. 575~~	~~2004~~	~~823~~	~~19.75~~	~~4.53~~	~~0.01~~	~~0.58~~	~~0.53~~
~~19317~~	~~RICE - Emergency Generator - Bldg. 600~~	~~2008~~	~~126~~	~~0.83~~	~~1.03~~	~~0.26~~	~~0.06~~	~~0.32~~
~~19318~~	~~RICE - Emergency Generator - Bldg. 620~~	~~2006~~	~~168~~	~~2.56~~	~~1.12~~	~~0.34~~	~~0.37~~	~~0.42~~
~~19319~~	~~RICE - Emergency Generator - Bldg. 622~~	~~2008~~	~~1214~~	~~12.85~~	~~6.96~~	~~0.01~~	~~0.40~~	~~0.78~~
~~19320~~	~~RICE - Emergency Generator - Bldg. 724~~	~~2009~~	~~398~~	~~2.63~~	~~2.3~~	~~0.82~~	~~0.13~~	~~1.00~~
~~19321~~	~~RICE - Emergency Generator - Bldg. 724~~	~~2012~~	~~568~~	~~3.76~~	~~3.26~~	~~1.16~~	~~0.19~~	~~1.43~~
~~19322~~	~~RICE - Emergency Generator - Bldg. 728~~	~~2003~~	~~201~~	~~6.23~~	~~1.34~~	~~0.41~~	~~0.44~~	~~0.51~~
~~19324~~	~~RICE - Emergency Generator - Bldg. 777~~	~~2011~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19325~~	~~RICE - Emergency Generator - Bldg. 777~~	~~2011~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19326~~	~~RICE - Emergency Generator - Bldg. 777~~	~~2012~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19327~~	~~RICE - Emergency Generator - Bldg. 780~~	~~2007~~	~~1220~~	~~12.91~~	~~6.99~~	~~0.01~~	~~0.40~~	~~0.78~~
~~19328~~	~~RICE - Emergency Generator - Bldg. 780~~	~~2007~~	~~1220~~	~~12.91~~	~~6.99~~	~~0.01~~	~~0.40~~	~~0.78~~
~~19329~~	~~RICE - Emergency Generator - Bldg. 780~~	~~2007~~	~~1220~~	~~12.91~~	~~6.99~~	~~0.01~~	~~0.40~~	~~0.78~~
~~19330~~	~~RICE - Emergency Generator - Bldg. 780~~	~~2007~~	~~1220~~	~~12.91~~	~~6.99~~	~~0.01~~	~~0.40~~	~~0.78~~

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~~A. Table 604.A, Internal Combustion – Emergency Generators Engine Allowable Emissions (revised in permit P119R2)~~

~~Emergency Generator Engines~~				~~PPH~~				
~~Unit ID~~	~~Building / Location~~	~~Year~~	~~Capacity (hp)~~	~~NO_x~~	~~CO~~	~~SO_x~~	~~PM/10/2.5~~	~~VOC~~
~~19331~~	~~RICE - Emergency Generator - Bldg. 790 (UPS)~~	~~2010~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19332~~	~~RICE - Emergency Generator - Bldg. 848~~	~~2013~~	~~917~~	~~9.70~~	~~5.26~~	~~0.01~~	~~0.30~~	~~0.59~~
~~19333~~	~~RICE - Emergency Generator - Bldg. 848~~	~~2013~~	~~917~~	~~9.70~~	~~5.26~~	~~0.01~~	~~0.30~~	~~0.59~~
~~19334~~	~~RICE - Emergency Generator - Bldg. 848~~	~~2013~~	~~917~~	~~9.70~~	~~5.26~~	~~0.01~~	~~0.30~~	~~0.59~~
~~19335~~	~~RICE - Emergency Generator - Bldg. 848~~	~~2013~~	~~917~~	~~9.70~~	~~5.26~~	~~0.01~~	~~0.30~~	~~0.59~~
~~19338~~	~~RICE - Emergency Generator - Bldg. 2134~~	~~2008~~	~~145~~	~~0.96~~	~~1.18~~	~~0.30~~	~~0.07~~	~~0.37~~
~~19339~~	~~RICE - Emergency Generator - Bldg. 2300~~	~~2001~~	~~34~~	~~1.05~~	~~0.23~~	~~0.07~~	~~0.07~~	~~0.09~~
~~19340~~	~~RICE - Emergency Generator - Bldg. 2302~~	~~2001~~	~~34~~	~~1.05~~	~~0.23~~	~~0.07~~	~~0.07~~	~~0.09~~
~~19341~~	~~RICE - Emergency Generator - Bldg. 2358 (DASR)~~	~~2009~~	~~158~~	~~1.04~~	~~1.29~~	~~0.32~~	~~0.08~~	~~0.40~~
~~19342~~	~~RICE - Emergency Generator - Bldg. 2360~~	~~2007~~	~~145~~	~~0.96~~	~~1.18~~	~~0.30~~	~~0.07~~	~~0.37~~
~~19343~~	~~RICE - Emergency Generator - Bldg. 2373~~	~~2009~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19344~~	~~RICE - Emergency Generator - Bldg. 3010~~	~~2005~~	~~27~~	~~0.84~~	~~0.18~~	~~0.06~~	~~0.06~~	~~0.07~~
~~19345~~	~~RICE - Emergency Generator - Bldg. 3033~~	~~2004~~	~~27~~	~~0.84~~	~~0.18~~	~~0.06~~	~~0.06~~	~~0.07~~
~~19347~~	~~RICE - Emergency Generator - Bldg. 3060~~	~~TBD~~	~~20~~	~~0.62~~	~~0.13~~	~~0.04~~	~~0.04~~	~~0.05~~
~~19356~~	~~RICE - Emergency Generator - Bldg. 4085~~	~~2012~~	~~1193~~	~~12.62~~	~~6.84~~	~~0.01~~	~~0.39~~	~~0.77~~
~~19357~~	~~RICE - Emergency Generator - Bldg. 4086~~	~~2004~~	~~168~~	~~5.21~~	~~1.12~~	~~0.34~~	~~0.37~~	~~0.42~~
~~19358~~	~~RICE - Emergency Generator - Bldg. 4606~~	~~2011~~	~~145~~	~~0.96~~	~~1.18~~	~~0.30~~	~~0.07~~	~~0.37~~
~~19359~~	~~RICE - Emergency Generator - Bldg. 4607~~	~~2011~~	~~324~~	~~2.14~~	~~1.86~~	~~0.66~~	~~0.11~~	~~0.82~~
~~19360~~ [6]	~~RICE - Future Emergency Generator - Bldg. 4626~~	~~>2006~~	~~500~~	~~3.31~~	~~2.9~~	~~1.03~~	~~0.17~~	~~1.26~~
~~19361~~	~~RICE - Emergency Generator - Bldg. 4734~~	~~2013~~	~~49~~	~~0.60~~	~~0.44~~	~~0.10~~	~~0.05~~	~~0.12~~
~~19362~~	~~RICE - Emergency Generator - Bldg. 5038~~	~~2008~~	~~364~~	~~2.41~~	~~2.1~~	~~0.75~~	~~0.12~~	~~0.92~~

~~A. Table 604.A, Internal Combustion – Emergency Generators Engine Allowable Emissions (revised in permit P119R2)~~

~~Emergency Generator Engines~~				~~PPH~~				
~~Unit ID~~	~~Building / Location~~	~~Year~~	~~Capacity (hp)~~	~~NO_x~~	~~CO~~	~~SO_x~~	~~PM/10/2.5~~	~~VOC~~
~~19363~~	~~RICE - Emergency Generator - Bldg. 9971~~	~~2002~~	~~170~~	~~5.27~~	~~1.14~~	~~0.35~~	~~0.37~~	~~0.43~~
~~19364~~	~~RICE - Emergency Generator - Bldg. 9973~~	~~2006~~	~~252~~	~~3.83~~	~~4.72~~	~~0.52~~	~~0.22~~	~~0.64~~
~~19365~~	~~RICE - Emergency Generator - Bldg. 74618~~	~~2012~~	~~755~~	~~7.99~~	~~4.33~~	~~0.01~~	~~0.25~~	~~0.48~~
~~19366~~	~~RICE - Emergency Generator – AOS Tower~~	~~2012~~	~~67~~	~~0.71~~	~~0.38~~	~~0.14~~	~~0.02~~	~~0.17~~
~~19367 - 19375~~	~~RICE - Future Emergency Generators~~	~~-~~	~~500 (each)[6]~~	~~29.76~~	~~25.8~~	~~9.23~~	~~1.49~~	~~11.34~~
~~Total emissions (lb/hr):~~				~~440.1~~	~~217.7~~	~~36.6~~	~~20.8~~	~~56.3~~
~~Total emissions (ton/yr):~~				~~110.0~~	~~54.4~~	~~9.2~~	~~5.2~~	~~14.1~~

A. Table 604.A, Internal Combustion - Emergency Generators Engine Allowable Emissions (revised in permit P119R3)

Emergency Generator Engines				PPH				
Unit ID	Building / Location	Year	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
19001	RICE - Fire Pump Engine - Bldg. 127	1989	320	9.92	2.14	0.66	0.70	0.81
19002	RICE - Fire Pump Engine - Bldg. 127	1989	320	9.92	2.14	0.66	0.70	0.81
19003	RICE - Fire Pump Engine - Bldg. 127	1991	302	9.36	2.02	0.62	0.66	0.76
19004	RICE - Fire Pump Engine - Bldg. 160	2012	224	1.48	1.28	0.46	0.07	0.56
19005	RICE - Fire Pump Engine - Bldg. 179	2008	277	4.76	1.59	0.57	0.24	0.70
19006	RICE - Fire Pump Engine - Bldg. 179	2008	277	4.76	1.59	0.57	0.24	0.70
19007	RICE - Fire Pump Engine - Bldg. 200	1989	231	7.16	1.54	0.47	0.51	0.58
19008	RICE - Fire Pump Engine - Bldg. 200	1989	231	7.16	1.54	0.47	0.51	0.58
19009	RICE - Fire Pump Engine - Bldg. 233	1991	228	7.07	1.52	0.47	0.50	0.57
19010	RICE - Fire Pump Engine - Bldg. 845	2014	74	0.57	0.60	0.15	0.05	0.19
19013	RICE - Fire Pump Engine - Bldg. 3208	1994	235	7.29	1.57	0.48	0.52	0.59
19014	RICE - Fire Pump Engine	1984	235	7.29	1.57	0.48	0.52	0.59

A. Table 604.A, Internal Combustion - Emergency Generators Engine Allowable Emissions (revised in permit P119R3)

Emergency Generator Engines				PPH				
Unit ID	Building / Location	Year	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
	- Bldg. 3208							
19015	RICE - Fire Pump Engine - Bldg. 3208	1994	235	7.29	1.57	0.48	0.52	0.59
19016	RICE - Fire Pump Engine - Bldg. 74605	2011	260	1.72	1.49	0.53	0.09	0.66
19017	RICE - Fire Pump Engine - Bldg. 74605	2010	260	1.72	1.49	0.53	0.09	0.66
19018	RICE - 74610 Fire Pump Engines	2013	350	2.31	2.01	0.72	0.12	0.88
19019	RICE - 74676 Fire Pump Engines	2015	121	0.80	0.99	0.25	0.06	0.30
19020	RICE - Fire Pump Engine - Bldg. 1434	2015	37	0.46	0.05	0.08	0.02	0.09
19021 - 19025	RICE - Future Fire Pump Engines	TBD	500 (each)	16.53	14.33	5.13	0.83	6.30
19301	RICE - Emergency Generator - Bldg. 10	2006	252	3.83	4.72	0.52	0.22	0.64
19302	RICE - Emergency Generator - Bldg. 12	2007	398	2.63	2.3	0.82	0.13	1.00
19303	RICE - Emergency Generator - Bldg. 77	2006	68	1.03	0.45	0.14	0.15	0.17
19304	RICE - Emergency Generator - Bldg. 116	2003	896	21.50	4.93	0.01	0.63	0.57
19305	RICE - Emergency Generator - Bldg. 123	2007	470	3.11	2.7	0.96	0.16	1.18
19306	RICE - Emergency Generator - Bldg. 128	2018	173	1.14	1.41	0.35	0.08	0.44
19307	RICE - Emergency Generator - Bldg. 135	2007	470	3.11	2.7	0.96	0.16	1.18
19308	RICE - Emergency Generator - Bldg. 158	2018	325	2.15	1.9	0.67	0.11	0.82
19310	RICE - Emergency Generator - Bldg. 216	2020	67	0.52	0.55	0.14	0.04	0.17
19311	RICE - Emergency Generator - Bldg. 281	2008	250	1.65	1.43	0.51	0.08	0.63
19312	RICE - Emergency Generator - Bldg. 317	2008	546	3.61	3.1	1.12	0.18	1.38
19313	RICE - Emergency Generator - Bldg. 336	2018	36	0.28	0.33	0.07	0.00	0.09
19314	RICE - Emergency Generator - Bldg. 337	2008	399	2.64	2.3	0.82	0.13	1.01
19315	RICE - Emergency Generator - Bldg. 356	2018	69	0.53	0.56	0.14	0.05	0.17
19316	RICE - Emergency Generator - Bldg. 575	2004	913	21.91	5.02	0.01	0.64	0.59

A. Table 604.A, Internal Combustion - Emergency Generators Engine Allowable Emissions (revised in permit P119R3)

Emergency Generator Engines				PPH				
Unit ID	Building / Location	Year	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
19317	RICE - Emergency Generator - Bldg. 600	2008	126	0.83	1.03	0.26	0.06	0.32
19318	RICE - Emergency Generator - Bldg. 620	2006	158	2.40	1.06	0.32	0.35	0.40
19319	RICE - Emergency Generator - Bldg. 622	2008	1214	12.85	6.96	0.01	0.40	0.78
19320	RICE - Emergency Generator - Bldg. 724	2009	398	2.63	2.3	0.82	0.13	1.00
19321	RICE - Emergency Generator - Bldg. 724	2012	865	9.15	4.96	0.01	0.29	0.55
19322	RICE - Emergency Generator - Bldg. 728	2017	94	0.73	0.77	0.19	0.06	0.24
19324	RICE - Emergency Generator - Bldg. 777	2011	755	7.99	4.33	0.01	0.25	0.48
19325	RICE - Emergency Generator - Bldg. 777	2011	755	7.99	4.33	0.01	0.25	0.48
19326	RICE - Emergency Generator - Bldg. 777	2012	755	7.99	4.33	0.01	0.25	0.48
19331	RICE - Emergency Generator - Bldg. 790 (UPS)	2010	755	7.99	4.33	0.01	0.25	0.48
19332	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19333	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19334	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19335	RICE - Emergency Generator - Bldg. 848	2013	917	9.70	5.26	0.01	0.30	0.59
19338	RICE - Emergency Generator - Bldg. 2134	2008	145	0.96	1.18	0.30	0.07	0.37
19339	RICE - Emergency Generator - Bldg. 2300	2001	45	1.40	0.30	0.09	0.10	0.11
19340	RICE - Emergency Generator - Bldg. 2302	2018	69	0.53	0.56	0.14	0.05	0.17
19341	RICE - Emergency Generator - Bldg. 2358 (DASR)	2009	139	0.92	1.13	0.28	0.07	0.35
19342	RICE - Emergency Generator - Bldg. 2360	2007	145	0.96	1.18	0.30	0.07	0.37
19343	RICE - Emergency Generator - Bldg. 2373	2009	755	7.99	4.33	0.01	0.25	0.48
19344	RICE - Emergency Generator - Bldg. 3010	2005	27	0.84	0.18	0.06	0.06	0.07
19345	RICE - Emergency	2004	27	0.84	0.18	0.06	0.06	0.07

A. Table 604.A, Internal Combustion - Emergency Generators Engine Allowable Emissions (revised in permit P119R3)

Emergency Generator Engines				PPH				
Unit ID	Building / Location	Year	Capacity (hp)	NO_x	CO	SO_x	PM/10/2.5	VOC
	Generator - Bldg. 3033							
19347	RICE - Emergency Generator - Bldg. 3060	2018	27	0.21	0.24	0.06	0.00	0.07
19356	RICE - Emergency Generator - Bldg. 4085	2012	1193	12.62	6.84	0.01	0.39	0.77
19357	RICE - Emergency Generator - Bldg. 4086	2004	168	5.21	1.12	0.34	0.37	0.42
19358	RICE - Emergency Generator - Bldg. 4606	2011	145	0.96	1.18	0.30	0.07	0.37
19359	RICE - Emergency Generator - Bldg. 4607	2011	324	2.14	1.86	0.66	0.11	0.82
19360 [6]	RICE - Future Emergency Generator - Bldg. 4626	TBD >2006	500	3.31	2.9	1.03	0.17	1.26
19361	RICE - Emergency Generator - Bldg. 4734	2013	49	0.60	0.44	0.10	0.05	0.12
19362	RICE - Emergency Generator - Bldg. 5038	2008	364	2.41	2.1	0.75	0.12	0.92
19363	RICE - Emergency Generator - Bldg. 9971	2002	170	5.27	1.14	0.35	0.37	0.43
19364	RICE - Emergency Generator - Bldg. 9973	2006	252	3.83	4.72	0.52	0.22	0.64
19365	RICE - Emergency Generator - Bldg. 74618	2012	755	7.99	4.33	0.01	0.25	0.48
19366	RICE - Emergency Generator - Bldg. AOS Tower	2017	67	0.71	0.38	0.14	0.02	0.17
19367	RICE - Emergency Generator - Bldg. 4904	2018	755	7.99	4.33	0.01	0.25	0.48
19368	RICE - Emergency Generator - Bldg. 102	2019	237	1.57	1.36	0.49	0.08	0.60
19369	RICE - Emergency Generator - Bldg. 3050	2014	39.9	0.31	0.36	0.08	0.00	0.10
19370 - 19379	RICE - Future Emergency Generators	>2006 TBD	500 (each)	33.07	28.7	10.25	1.65	12.60
Total emissions (lb/hr):				**379.22**	**201.73**	**39.01**	**18.05**	**56.77**
Total emissions (ton/yr):				**94.81**	**50.43**	**9.75**	**4.51**	**14.19**

~~A.~~B. Operating Restrictions for Emergency Generators and Fire Pump Engines (Units listed in Table 104.A)

Requirement: To demonstrate compliance with the allowable emission limits in Tables 106.A and A604.A, units shall operate no more than 500 hours on a monthly rolling 12-month total.

Monitoring: The permittee shall monitor the monthly rolling 12-month total hours of operation for all units using a no-resettable hour meter.
Recordkeeping: The permittee shall maintain the following records in accordance with Section B109: 1) The permittee shall keep records of the monthly rolling 12-month total hours of operation of all units, as indicated on the non-resettable hour meter. 2) The permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for maintenance checks and readiness testing.
Reporting: The permittee shall report in accordance with Section B110.

~~B.~~C. Fuel and Fuel Sulfur Requirements – All Reciprocating Internal Combustion Engines (RICE)

Requirement: All RICE listed in Table 104.A at the facility shall combust only Non-Road Diesel (Ultra-Low Sulfur Diesel, ULSD) containing no more than 15 ppm total sulfur.
Monitoring: None. Compliance is demonstrated through records.
Recordkeeping: The permittee shall demonstrate compliance with the limit on total fuel sulfur content by maintaining records in accordance with Section B109 of a current, valid purchase contract, tariff sheet or transportation contract for the fuel, or fuel analysis, specifying the fuel grade and certification or allowable sulfur limit. If fuel analysis is used, the analysis shall not be older than one year. Alternatively, compliance may be demonstrated by keeping a receipt or invoice from a commercial fuel supplier with each fuel delivery, which shall include the delivery date, the fuel type delivered, amount of fuel delivered, and the maximum sulfur content of the fuel.
Reporting: The permittee shall report in accordance with Section B110.

~~C.~~D. Emission Calculations (All RICE)

Requirement: Compliance with the allowable emission limits in Tables 106.A and 604.A shall be demonstrated by calculating RICE emissions using performance test data, manufacturer's certified emissions, NSPS emission standards, AP-42 emission factors, or other emission factors deemed acceptable by the Air Quality Bureau.
Monitoring: The permittee shall: 1) Calculate the actual emissions rate (tons/month) for the RICE emission units listed in Table 104.A. 2) Calculate the monthly rolling 12-month total emissions rate (tons/year) for this source category and compare them to the emission limits in Table 106.A and 604.A.
Recordkeeping: The permittee shall keep records of the monthly 12-month total emissions for

each unit and the calculations used to determine these emissions. The permittee shall maintain records in accordance with Section B109.

Reporting: The permittee shall report in accordance with Section B110.

~~D.~~E. New Source Performance Standards (NSPS) 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - General Requirements. (revised in permit P119R~~2~~3)

Requirements: Units 19004-19006, 19010, 19016, 19017, 19018, 19019, 19020, 19301-19303, 19305-19315, ~~1930~~19317-19326, 19331-19338, 19340-19343, 19347, 19356, 19358-19362, 19364-19369,~~19311-19314, 19317-19321, 19324-19335, 19338, 19341-19343, 19356, 19358-19362, 19364, 19365, 19366,~~ and the proposed/anticipated units designated 19021-1902~~3~~5 and 193~~67~~70-1937~~5~~9 are subject to Subpart IIII under Paragraph 60.4205 & 60.4206. These engines shall comply with all applicable requirements in 40 CFR 60, Subparts A and IIII, including the following general requirements from Subpart IIII:

1) The permittee shall install a non-resettable hour meter if one is not already installed.
2) The permittee shall operate and maintain the units and control device according to the manufacturer's written instructions or procedures developed by the permittee. In addition, the permittee may change only those settings that are permitted by the manufacturer.
3) Stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel shall use diesel fuel that meets, at a minimum, the following standards of 40 CFR 80.510(b) for nonroad diesel fuel (Paragraph 60.4207(b)):
   (a) Sulfur content.
      (i) 15 ppm maximum for nonroad (NR) diesel fuel.
   (b) Cetane index or aromatic content, as follows:
      (i) A minimum cetane index of 40; or
      (ii) A maximum aromatic content of 35 volume percent.
4) If the NSPS IIII requirements for these units change due to either a change in use of these units or a change in regulation, the permittee shall meet all applicable requirements.

Monitoring: The permittee shall comply with all applicable monitoring and testing requirements of 40 CFR 60, Subparts A and IIII.

Recordkeeping: The permittee shall maintain the following records as applicable, all records required by 40 CFR 60, Subpart IIII, and in accordance with Section B109:

1) Compliance with requirement 2 shall be demonstrated by maintaining records of the maintenance conducted on the affected stationary CI ICE.
2) Compliance with requirement 3 shall be demonstrated by maintaining the test records, certification, or specification sheet provided by the fuel supplier.

Reporting: The permittee shall report as required by 40 CFR 60, Subpart IIII, and in accordance with Section B110.

~~E.~~F. NSPS 40 CFR 60 Subpart IIII - Emission Standards, Paragraph 60.4205(a) and (c) (revised in permit P119R~~2~~3)

Requirement: Units19004-19006, 19010, 19016~~, 19017, 19018, 19019,~~-19020, 19301-19303, 19305-19315, 19317-19326, 19331-19338, 19340-19343, 19347, 19356, 19358-19362, 19364-19369,~~19307, 19311-19314, 19317-19321, 19324-19335, 19338, 19341-19343, 19356, 19358-19362, 19364, 19365, 19366,~~ and the proposed/anticipated units designated 19021-1902~~3~~5 and 193~~67~~70-1937~~5~~9 are subject to the emission standards in Paragraph 60.4205 as they apply to each specific engine.

If the NSPS IIII requirements for these units change due to either a change in use of these units or a change in regulation, the permittee shall meet all applicable requirements.

Monitoring: The permittee shall comply with all applicable monitoring and testing requirements of 40 CFR 60, Subparts A and IIII.

Recordkeeping: The permittee shall maintain the following records as applicable, all records required by 40 CFR 60, Subpart IIII, and in accordance with Section B109:

1) For pre-2007 models of stationary CI ICE that are required to comply with the emission standards specified in Paragraph 60.4205(a), or fire pump engines manufactured prior to 2008 that are required to comply with the emission standards specified in Paragraph 60.4205(c), the permittee shall demonstrate compliance with the emission standard according to **one** of the methods specified in Paragraphs 60.4211(b)(1) through (5) as follows:
   (a) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications, or
   (b) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly, or
   (c) Keeping records of engine manufacturer data indicating compliance with the standards, or
   (d) Keeping records of control device vendor data indicating compliance with the standards, or
   (e) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.
2) For 2007 model year and later stationary CI ICE that are required to comply with the emission standards specified in Paragraph 60.4205(b), or fire pump engines manufactured on or after 2008 that are required to comply with the emission standards specified in Paragraph 60.4205(c), the permittee shall demonstrate this compliance according to Paragraph 60.4211(c) as follows:

(a) Purchasing an engine certified to the applicable emission standard from Paragraphs 60.4205(b) or (c) for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's specifications.

Reporting: The permittee shall report as required by 40 CFR 60, Subpart IIII and in accordance with Section B110.

~~F.~~G. National Emissions Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines.

Requirement: Units 19001-19003, 19007-19009, 19013-19015, 19304, ~~19306, 19308 19310, 19315,~~ 19316, ~~19322,~~ 19339, ~~19340,~~ 19344, 19345, ~~19347,~~ 19357, 19363 are subject to 40 CFR 63, Subparts A and ZZZZ as "existing stationary RICE" under Paragraph 63.6590(a)(1)(iii). These engines must comply with applicable requirements including the following requirements by May 3, 2013 for diesel engines (Paragraph 63.6595(a)(1)):

1) The permittee shall comply with applicable requirements in Table 2d and applicable operating limits in Table 2.b including the following work practices listed under Item 4 in Table 2d of Subpart ZZZZ:
   (a) Change oil and filter every 500 hours of operation or annually, whichever comes first;
   (b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first and replace as necessary; and
   (c) Inspect all hoses and belts (as applicable) every 500 hours of operation or annually, whichever comes first, and replace as necessary.
2) The permittee shall operate and maintain these emergency engines and after treatment control device (if any) according to the manufacturer's emission-related written instructions or maintenance plan developed by the permittee which provides to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions (Paragraph 63.6625(e)).
3) The permittee shall install a non-resettable hour meter if one is not already installed (Paragraph 63.6625(f)).
4) The permittee shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes (Paragraph 63.6625(h)).
5) Notifications are not required for these units under Paragraph 63.6645(a)(5).
6) If the MACT ZZZZ requirements for these units change due to either a change in use of these units or a change in regulation, the permittee shall meet all applicable requirements.

Monitoring: The permittee shall comply with all applicable monitoring requirements of 40 CFR 63, Subparts A and ZZZZ.

Recordkeeping: The permittee shall maintain the following records as applicable, all records required by 40 CFR 63, Subpart ZZZZ, and in accordance with Section B109:

1) Compliance with requirements 1 and 2 shall be demonstrated by maintaining records of the maintenance conducted on the affected engines according to Paragraph 63.6655(e).
2) Each record must be kept readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action,

report, or record, (as applicable), according to Paragraph 63.10(b)(1) of 40 CFR 63 Subpart A, as specified in Paragraph 63.6660.
Reporting: The permittee shall submit notifications and reports as required by 40 CFR 63, Subpart ZZZZ, and in accordance with Section B110: 1) The permittee shall report each instance in which the work practices were not met from Item 5 in Table 2d of Subpart ZZZZ. These instances are deviations from the emissions and operating limitations in this subpart. These deviations must be reported in the semiannual monitoring report on the schedule in Section A109 (Paragraphs 63.6640(b) and 63.6650(b)(5)).

A605 Miscellaneous Chemical Use

A. Emission Calculations for Unit 31999

Requirement: The permittee shall calculate TPY emissions of individual and total HAPs resulting from miscellaneous chemical use, based on the chemical use records, Safety Data Sheet (SDS) information, and the equations provided in the permit application, or other emission factors and calculation methods deemed acceptable by the Air Quality Bureau.
Monitoring: The permittee shall monitor facility wide chemical usage using an electronic chemical tracking system. The quantity of chemicals that are vented to the atmosphere shall be estimated on a semi-annual basis.
Recordkeeping: The permittee shall record the TPY quantity of each individual HAP and total HAP emissions on a monthly basis and maintain records in accordance with Section B109. The permittee shall also keep records of the calculations and information used to determine HAP emission rates.
Reporting: The permittee shall report in accordance with Section B110.

A606 Gasoline Fuel Distribution

A. 40 CFR 63, Subpart BBBBBB for Unit 16001 (added in permit P119R~~2~~3)

Requirement: The unit is subject to 40 CFR 63, Subpart BBBBBB and the permittee shall comply with all applicable requirements of Subparts A and BBBBBB.
Monitoring: The permittee shall comply with all applicable monitoring requirements of 40 CFR 63, Subparts A and BBBBBB.
Recordkeeping: The permittee shall comply with all applicable recordkeeping requirements of 40 CFR 63, Subpart A and Subpart BBBBBB, including but not limited to 63.11094.
Reporting: The permittee shall comply with all applicable reporting requirements of 40 CFR 63, Subpart A and BBBBBB, including but not limited to 63.11095

PART B GENERAL CONDITIONS (Attached)

PART C MISCELLANEOUS: Supporting On-Line Documents; Definitions;

Acronyms (Attached)

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Section 21

Addendum for Landfill Applications

Do not print this section unless this is a landfill application.

Landfill Applications are not required to complete Sections 1-C Input Capacity and Production Rate, 1-E Operating Schedule, 17 Compliance Test History, and 18 Streamline Applications. Section 12 – PSD Applicability is required only for Landfills with Gas Collection and Control Systems and/or landfills with other non-fugitive stationary sources of air emissions such as engines, turbines, boilers, heaters. All other Sections of the Universal Application Form are required.

EPA Background Information for MSW Landfill Air Quality Regulations:
https://www3.epa.gov/airtoxics/landfill/landflpg.html

NM Solid Waste Bureau Website: https://www.env.nm.gov/swb/

Section 21 does not apply to this Title V operating permit renewal application.

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Section 22: Certification

Company Name: _____

I, _____, 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 ____ day of _____, _____, upon my oath or affirmation, before a notary of the State of

_____.

_____ _____
*Signature Date

_____ _____
Printed Name Title

Scribed and sworn before me on this ____ day of _____, _____.

My authorization as a notary of the State of _____ expires on the

_____ day of _____, _____.

_____ _____
Notary's Signature Date

_____
Notary's Printed Name

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.