NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: TBD

Region: Fayetteville Regional Office
County: Cumberland
NC Facility ID: 2600102
Inspector's Name: Evangelyn Lowery-Jacobs
Date of Last Inspection: 02/10/2022
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): HQ XVIII ABN Corps & Fort Liberty

Facility Address:
HQ XVIII ABN Corps & Fort Liberty
AMIM-LIP
Fort Liberty, NC 28310

SIC: 9711 / National Security
NAICS: 92811 / National Security

Facility Classification: Before: Title V **After:**
Fee Classification: Before: Title V **After:**

Permit Applicability (this application only)

SIP: 02D: .0503, .0515, .0516, .0521, .0524, .0600, .1111
02Q: .0317, .0711
NSPS: Dc, GG, IIII
NESHAP: GG, YYYY, ZZZZ, DDDDD, PPPPP
PSD: Major source
PSD Avoidance: 02Q .0317
NC Toxics: 02Q .0711
112(r): n/a
Other: 40 CFR Part 62, Subpart OOO

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Michael Fischer DPW-ECB AQ Program Manager (910) 907-3975 AMIM-LIP-EC Fort Liberty, NC 28310+5000	Aaron Brown Deputy Director of Public Works (910) 396-7202 AMIM-LIP Fort Liberty, NC 28310+5000	Michael Fischer DPW-ECB AQ Program Manager (910) 907-3975 AMIM-LIP-EC Fort Liberty, NC 28310+5000

Application Data

Application Numbers: 2600102.20A, .21A, .22A
Date Received: 12/22/20(.20A); 09/28/2021(.21A); 12/05/22(.22A)
Application Type: Renewal/Modification
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 04379/T46
Existing Permit Issue Date: 04/05/2019
Existing Permit Expiration Date: 03/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	0.8600	75.49	31.18	53.17	5.39	3.50	1.38 [Toluene]
2020	0.9600	77.10	32.15	51.40	5.17	3.65	1.43 [Toluene]
2019	1.18	85.40	34.36	54.48	5.64	3.84	1.50 [Toluene]
2018	1.51	99.10	38.24	57.58	6.24	3.99	1.62 [Toluene]
2017	1.25	100.86	36.71	57.96	6.29	4.41	1.69 [Toluene]

Review Engineer: Russell Braswell **Review Engineer's Signature:** **Date:**	**Comments / Recommendations:** **Issue** 04379/T47 **Permit Issue Date:** TBD **Permit Expiration Date:** TBD+5 years

1.0 Purpose of Applications

- Application 2600102.20A (TV significant modification, consolidated into application .21A)

HQ XVIII ABN Corps & Fort Liberty[1] (Fort Liberty; the facility) operates a military base in Cumberland County under Title V permit 04379T46 (the existing permit). Fort Liberty submitted this application for significant modification of the Title V permit per 02Q .0501(b)(1) in order to make the below changes to the existing permit. Many of the proposed sources will qualify as insignificant activities, and therefore will not be included in the list of permitted activities in the newly modified permit.

Permitted Emission Sources	Requested Change
ES-17PSG	Emergency-only. No peak shaving capabilities.
ES-34B	This unit is a waste-heat boiler, and therefore is not subject to MACT Subpart DDDDD.
ES-203GI	Capacity should be 250 kW.*
ES-01TP	Change description to "Tank cleaning and purging system with two 2.0 million Btu per hour heat input natural gas-fired water heaters"*
ES-926B	Add a 2.5 million Btu per hour natural gas-fired boiler*
ES-927B	Add a 2.5 million Btu per hour natural gas-fired boiler*
ES-928B	Add a 2.5 million Btu per hour natural gas-fired boiler*
ES-186GI	Add a 35 kW diesel-fired emergency generator*
ES-204GI	Add a 300 kW diesel-fired emergency generator*
ES-205GI	Add a 400 kW diesel-fired emergency generator*
ES-105G	Add a 500 kW diesel-fired emergency generator
ES-106G	Add a 1,000 kW diesel-fired emergency generator
ES-107G	Add a 2,000 kW diesel-fired emergency generator
ES-108G	Add a 500 kW diesel/natural gas-fired emergency generator
ES-109G	Add a 500 kW diesel-fired emergency generator
ES-601B	Remove this source.
ES-602B	Remove this source.
ES-02PSG	Remove this source.
ES-03PSG	Remove this source.
ES-10PSG	Remove this source.

* These sources will instead be added to the list of insignificant activities.

Insig. Activities	Requested Change
IES-DUSTCELL	Change ID and description to "IES-02SD: Blade Sanding Shop"
IES-01SD	Change description to "Blade Sanding Shop"
IES-09C	Change ID to IES-09H

[1] Formerly "Fort Bragg."

Insig. Activities	Requested Change
IES-00B	Adding additional hot water heaters.
IES-04WO	Remove this source.
IES-107BDI	Remove this source.

Other changes
Remove all references to the expired case-by-case MACT.
Various typos in ID names and various corrections

DAQ will consolidate the processing of this application with application .21A.

- Application 2600102.21A (TV permit renewal, with significant modification)

The existing Title V permit has an expiration date of March 31, 2022. As required by General Condition K of the existing permit, Fort Liberty submitted this permit application in order to renew the Title V permit. Because the application for permit renewal was received at least six months before the expiration date of the existing permit, the existing permit will remain in effect (regardless of expiration date) until the renewed Title V permit is issued.

In addition to permit renewal, Fort Liberty requested the below modifications to the existing permit. These modifications constitute a significant modification per 02Q .0501(b)(1).

Permitted Emission Sources	Requested Change
ES-922B	Change heat input to 8.165 million Btu per hour (previously 8.0)
ES-929B	Add a natural gas-fired hot water heater (2.5 million Btu per hour)*
ES-930B	Add a natural gas-fired hot water heater (2.5 million Btu per hour)*
ES-931B	Add a natural gas-fired hot water heater (2.07 million Btu per hour)*
ES-930B	Add a natural gas-fired hot water heater (3.0 million Btu per hour)*
ES-931B	Add a natural gas-fired hot water heater (3.0 million Btu per hour)*
ES-206GI	Add a diesel-fired emergency generator (125 kW)*
ES-207GI	Add a diesel-fired emergency generator (250 kW)*
ES-208GI	Add a natural gas-fired non-emergency generator (75 kW)*
ES-923B	Remove this source.

* These sources will instead be added to the list of insignificant activities.

Insig. Activities	Requested Change
IES-00B	Adding additional hot water heaters.

Other changes
Various typos in ID names and various corrections

After submitting this application, Fort Liberty amended the application in order to make the gas turbine ES-33B emergency-use only.

- Application 2600102.22A (TV significant modification, consolidated into application .21A)

Fort Liberty submitted this application for significant modification of the Title V permit per 02Q .0501(b)(1) in order to make the below changes to the existing permit. Many of the proposed sources will

qualify as insignificant activities, and therefore will not be included in the list of permitted activities in the newly modified permit.

Emission Source	Requested Change
ES-934B	Add a natural gas-fired boiler (2.00 million Btu per hour)*
ES-935B	Add a natural gas-fired boiler (2.50 million Btu per hour)*
ES-936B	Add a natural gas-fired boiler (1.795 million Btu per hour)*
ES-937B	Add a natural gas-fired boiler (2.163 million Btu per hour)*
ES-938B	Add a natural gas-fired air make-up unit (7.00 million Btu per hour) at Building A2537*
ES-939B	Add a natural gas-fired air make-up unit (7.00 million Btu per hour) at Building A2537*
ES-940B	Add a natural gas-fired air make-up unit (7.00 million Btu per hour) at Building A2537*
ES-941B	Add a natural gas-fired air make-up unit (7.00 million Btu per hour) at Building A2537*
ES-110G	Add a diesel-fired emergency generator (1,500 kW)
ES-111G	Add a diesel-fired emergency generator (1,500 kW)
ES-112G	Add a diesel-fired emergency generator (2,000 kW)
ES-113G	Add a diesel-fired emergency generator (2,000 kW)
ES-114G	Add a diesel-fired emergency generator (2,000 kW)
ES-115G	Add a diesel-fired emergency generator (2,000 kW)
ES-116G[2]	Add a diesel-fired emergency generator (1,750 kW)
ES-84G	Remove this source.
ES-85G	Remove this source.
ES-86G	Remove this source.
ES-108G[3]	Remove this source.

* These sources will instead be added to the list of insignificant activities.

Insig. Activities	Requested Change
IES-00B	Numerous additions and removals to the hot water heaters.
IES-20T	Add an above-ground diesel/JSOC compound storage tank (50,000 gallons)
IES-21T	Add an above-ground diesel/JSOC compound storage tank (50,000 gallons)
IES-22T	Add an above-ground diesel/JSOC compound storage tank (50,000 gallons)
IES-02FP	Add an above-ground diesel storage tank (6,000 gallons)
IES-03FP	Add an above-ground MOGAS storage tank (6,000 gallons)
IES-11T756E	Remove this source.
IES-11T756EF	Remove this source.
IES-02UST	Remove this source.

DAQ will consolidate the processing of this application with application .21A.

[2] This source was included in an application addendum received March 2, 2023
[3] This source had been proposed by application .21A.

2.0 Facility Description

According to the most recent inspection report, "Fort Bragg is a military installation with approximately 50,000 active-duty military personnel. The Department of Public Works (DPW) Environmental Compliance Branch manages the air quality program for Fort Bragg. The majority of emissions generated from this facility result from the combustion of natural gas and fuel oil for several large heating plants and many smaller localized boilers. Additional air emissions are associated with power generation, paint booths, engine testing, tank cleaning and purging, closed out landfills, and other various maintenance operations."

3.0 Permit History Following Previous Title V Permit Renewal

Date	Permit Revision	Application Type	Notes
April 25, 2017	T43	Renewal	This revision was the most recent renewal of the Title V permit. As part of this renewal: o References to 15A NCAC 02D .0958 were removed from the permit. o Specific conditions for 40 CFR Part 63, Subpart DDDDD were added to the permit. o Formatting revisions and typo corrections.
October 4, 2018	T44	Significant Modification	Changes made as part of this significant modification: o Added new boilers and generators as requested by Fort Liberty. o Removed boilers and generators as requested by Fort Liberty. o Added references to "selective catalytic reduction" for generator ES-87G o Formatting revisions and typo corrections.
November 1, 2018	T45	Administrative Amendment	Added several emergency generators to the permit.
April 5, 2019	T46	Significant Modification	Changes made as part of this significant modification: o Added new boilers and generators as requested by Fort Liberty. o Removed boilers and generators as requested by Fort Liberty. o Added references to "selective catalytic reduction" for generators ES-191GI and ES-192GI.

4.0 Application Chronology

Date	Event
December 22, 2020	Application .20A received.
September 28, 2021	Application .21A received.
October 18, 2022	Applications .20A and .21A transferred to Russell Braswell.
December 6, 2022	Application .22A received.
February 14, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Do ES-35B and ES-TEMPBOIL qualify as temporary boilers under NSPS Subpart Dc and MACT Subpart DDDDD? 2. Should ES-38B and ES-39B still be subject to NSPS Subpart Dc? 3. What is the total capacity of the boilers under the group IES-00B?
February 14, 2023	Response received to the February 14 request received via email.
February 21, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Is the turbine ES-35B subject to MACT Subpart YYYY? 2. Are there any site-specific parameters for the turbine ES-35B under NSPS Subpart GG?
March 2, 2023	Application amendment received. This requested the addition of one additional generator not included in the original .22A application submittal.
March 7, 2023	Response received to the February 21 request via phone call. 1. The turbine is subject to MACT Subpart YYYY, but Fort Liberty is considering classifying this source as emergency. 2. There are no site-specific parameters for ES-35B
March 7, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Based on the March 7 phone call, the turbine ES-35B may qualify as an emergency unit under MACT Subpart YYYY and NSPS Subpart GG. Please confirm that this is the case.
March 13, 2023	Response received to the March 7 request via phone call. Based on this call, Fort Liberty was still investigating the emergency status of the turbine at this time.
March 21, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Are the landfills still operating? If not, when did the landfills close? 2. Do these landfills have any collection and control? 3. Are the landfills subject to NSPS? 4. Does Fort Liberty have any copies of the air dispersion modeling demonstration originally submitted on January 3, 2012?
March 21, 2023	Response received to the March 21 request via email. This email answered items 1, 2, and 3.
March 22, 2023	Response received to the March 21 request via email. This email answered item 4.
March 31, 2023	Application amendment received. This requested the turbine ES-33B be reclassified as an emergency unit under NSPS Subpart GG and MACT Subpart YYYY. This also satisfied the March 7 request.
April 3, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Should the small boilers and generators that qualify as insignificant per 02Q .0503(8) be moved to the list of insignificant activities in Section 3 of the permit? 2. Should the remaining similar boilers and generators be grouped together throughout the permit in order to reduce repetition?

Date	Event
April 4, 2023	Response received to the April 3 request via email. Fort Liberty agreed to move the small boilers and generators to the list of insignificant activities and to regroup the remaining sources in the permit in order to reduce repetition.
April 11, 2023	An updated draft of the list of permitted activities and insignificant activities were sent to Fort Liberty for review.
April 17, 2023	Response received to the April 11 draft of permitted and insignificant activities.
May 25, 2023	Request for additional information sent to Fort Liberty staff via email: 1. The threshold for insignificant oil-fired boilers in an earlier email was incorrect. The correct threshold is 2.25 million Btu per hour. The equipment list must be updated again to account for this. 2. Additional recordkeeping is required for the temporary generators and boilers.
May 26, 2023	Response received to the May 25 request: 1. The response listed several boilers that must be re-added to the equipment list based on the change in insignificant threshold. 2. The response provided corrections for the proposed recordkeeping for the temporary generators and boilers. 3. The facility's name will be updating to "Fort Liberty" as of June 2 (formerly "Fort Bragg")
May 26, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Should the name on the Title V permit be changed to "Fort Liberty"? 2. When were the boilers (item #1 in the May 26 response) originally added to the facility?
May 30, 2023	Response received to the May 26 request: 1. Yes, the name on the permit should change. 2. The boilers were originally added with the T38 revision.
June 21, 2023	An initial draft of the Title V permit and this application review were sent to DAQ Permits staff for review.
July 6, 2023	A revised draft of the Title V permit and this application review were sent to DAQ SSCB staff, DAQ FRO staff, and Fort Liberty staff.
July 17, 2023	Request for additional information sent to Fort Liberty staff via email: 1. Are IES-05E, IES-07E, and IES-08E subject to MACT Subpart PPPPP? 2. When were they initially constructed?
July 17, 2023	Response received to the above request. Fort Liberty stated that IES-05E, IES-07E, and IES-08E are not subject to MACT Subpart PPPPP.
XXXX	Public notice / EPA Review
XXXX	Permit issued.

5.0 Permit Modifications

- In the existing permit, one generator (ID No. ES-17PSG) is marked as "peak-shaving." A peak-shaving generator is not an emergency-use generator. In application .20A, Fort Liberty indicated that ES-17PSG is no longer a peak-shaving generator, and is now for emergency-use only. As a result, there are no non-emergency generators at this facility. Requirements for non-emergency stationary engines will be removed from the permit.

- In the existing permit, three generators (ID Nos. ES-87G, ES-191GI, and ES-192GI) are marked as having "selective catalytic reduction" (SCR). SCR is generally used to control NOx. In the existing permit, the SCR for these generators are not marked as a control device. In the new permit, these SCR systems will be marked as a control device. This change is only for clarity, and does not reflect a physical change at the facility.

- Several sources have been moved to the list of insignificant activities because they have potential emissions less than the limit in 02Q .0503(8). Each boiler and generator (excluding sources subject to a PSD avoidance limit) with capacities less than the thresholds below have been moved to the list of insignificant activities:

  Gas-fired boilers and water heaters: Using the NOx emission factor from AP-42 Table 1.4-1 for small boilers, a gas-fired boiler with capacity less than 11.6 MMBtu/hr will be insignificant per 02Q .0503(8):

$$\left(\frac{100\ \text{lb}_{\text{NOx}}}{10^6\ \text{scf}}\right)\times\left(\frac{10^6\ \text{scf}}{1{,}020\ \text{MMBtu}}\right)\times\left(\frac{\mathbf{11.6\ MMBtu}}{\mathbf{hr}}\right)\times\left(\frac{8{,}760\ \text{hr}}{\text{yr}}\right)\times\left(\frac{1\ \text{ton}}{2{,}000\ \text{lb}}\right)=\frac{5\ \text{ton}_{\text{NOx}}}{\text{yr}}$$

  Oil-fired boilers and water heaters:[4] Using the SO_2 emission factor AP-42 Table 1.3-1 for distillate oil fired boilers with capacity less than 100 MMBtu/hr (and S=0.5), an oil-fired boiler with capacity less than 2.25 MMBtu/hr will be insignificant per 02Q .0503(8):

$$\left(\frac{[142\times 0.5]\ \text{lb}_{\text{SO}_2}}{10^3\ \text{gal}}\right)\times\left(\frac{10^3\ \text{gal}}{140\ \text{MMBtu}}\right)\times\left(\frac{\mathbf{2.25\ MMBtu}}{\mathbf{hr}}\right)\times\left(\frac{8{,}760\ \text{hr}}{\text{yr}}\right)\times\left(\frac{1\ \text{ton}}{2{,}000\ \text{lb}}\right)=\frac{5\ \text{ton}_{\text{SO}_2}}{\text{yr}}$$

  Propane-fired water heaters: Using the NOx emission factor from AP-42 Table 1.5-1 for propane-fired boilers, a propane-fired boiler with capacity less than 8.03 MMBtu/hr will be insignificant per 02Q .0503(8):

$$\left(\frac{13\ \text{lb}_{\text{NOx}}}{10^3\ \text{gal}}\right)\times\left(\frac{10^3\ \text{gal}}{91.5\ \text{MMBtu}}\right)\times\left(\frac{\mathbf{8.03\ MMBtu}}{\mathbf{hr}}\right)\times\left(\frac{8{,}760\ \text{hr}}{\text{yr}}\right)\times\left(\frac{1\ \text{ton}}{2{,}000\ \text{lb}}\right)=\frac{5\ \text{ton}_{\text{NOx}}}{\text{yr}}$$

  Diesel-fired emergency-use engines: Using the NOx emission factor from AP-42 Table 3.3-1 for diesel fuel engines, an emergency-use engine with capacity less than 644 horsepower will be insignificant per 02Q .0503(8):

$$\left(\frac{0.031\ \text{lb}_{\text{NOx}}}{\text{hp-hr}}\right)\times(\mathbf{644\ hp})\times\left(\frac{500\ \text{hr}}{\text{yr}}\right)\times\left(\frac{1\ \text{ton}}{2{,}000\ \text{lb}}\right)=\frac{5\ \text{ton}_{\text{NOx}}}{\text{yr}}$$

[4] This also includes boilers that can be fired with oil or gas.

- Fort Liberty operates a combined-cycle combustion turbine and associated heat-recovery steam generator. According to an application addendum received March 31, 2023, this system will only be used during periods of emergency. The permit will be updated to indicate that this system is an emergency turbine for the purposes of NSPS Subpart GG and MACT Subpart YYYY.

- In the three applications covered by this review, Fort Liberty requested the addition and removal of several sources. See Section 1 for a list of proposed new and removed sources.

- The table below summarizes the changes to the Title V permit:

Page No.	Section	Description of Changes
Throughout	Throughout	• Updated dates and permit numbers. • Fixed formatting. Changes that apply solely to formatting are not intended to affect the Permittee's compliance requirements. • Removed references to 02D .1109 and Case-by-Case MACT because that rule no longer applies. • Updated authorized official.

Page No.	Section	Description of Changes
4	1	• Removed references to "used No. 2 oil" • Noted that ES-17PSG is now emergency-use only. • Moved small boilers and engines (not subject to PSD avoidance) that qualify as insignificant per 02Q .0503(8) to the list of insignificant activities. These sources have been consolidated in the list of insignificant activities. See list below for ID Nos moved and consolidated this way. • Removed sources as requested by Permittee. See list below for ID Nos removed. • Noted that the turbine ES-33B is for emergency use under the NSPS and MACT. • Added cyclone CD-01P-C associated with ES-01P based on email from Permittee. • Renamed "CD-01P" to "CD-01P-FF" to differentiate from the new cyclone. • Noted that ES-01E and ES-02E are subject to MACT Subpart PPPPP. • Moved the following to list of insignificant activities because they qualify per 02Q .0503(8): o welding operations ES-27W and ES-28W o tank cleaning operation ES-01TP • Noted building locations for ES-36B, ES-37B, ES-38B, and ES-39B. • Corrected heat input of ES-922B to 8.165 million Btu per hour. • Corrected capacity of ES-33G to 1,275 kW. • Noted that the SCR associated with ES-87G, ES-191GI, and ES-192GI are control devices. This change is only for clarity. • Added emission sources as requested by Permittee. See the following table for a list of sources added based on applications .20A, .21A, and .22A. • Added the following boilers to the list of permitted emission sources. These boilers previously were categorized under IES-00B, but do not qualify as insignificant activities: o ES-647B o ES-648B o ES-943B o ES-944B o ES-945B
n/a	2.1 A through E (new)	• Created these sections. • Grouped similar boilers and generators into these sections based on NSPS applicability. • Noted that all boilers are subject to 02D .0503. This will not change the Permittee's compliance requirements.

Page No.	Section	Description of Changes
10	2.1 A.2	• Rewrote the condition for NSPS Subpart Dc to match DAQ standard format. • Clarified emission standards for NSPS Subpart Dc for distillate-fired boilers with capacity greater than 30 million Btu per hour. • Clarified that fuel recordkeeping is required for NSPS Subpart Dc. • Added opacity monitoring requirements for when boilers are firing fuel oil.
14	2.1 B.3	• Clarified emission standards for NSPS Subpart Dc for distillate-fired boilers with capacity less than 30 million Btu per hour. • Clarified that fuel recordkeeping is required for NSPS Subpart Dc.
20	2.1 D.3	• Removed references to non-emergency use activities because all of these engines are emergency-use only.
26	2.1 F	• Removed reference to TAP "exemptions" and "pollutant modeling" because the turbine is subject to a MACT. Note that the HRSG is not subject to a MACT and therefore subject to 02Q .0711.
27	2.1 F.4	• Because ES-34B is gas-fired only, the only requirement under NSPS Subpart Dc is to maintain records of fuel use. • Changed the requirements of NSPS Subpart GG to reflect that the turbine is now emergency-use only. • Added specific condition for MACT Subpart YYYY.
n/a	2.1 F (onwards)	• Rearranged subsequent sections to reflect above renumbering.
31	2.1 H.	• Moved specific condition for MACT Subpart GG to this section because it only applies to sources in this section. • Updated specific condition for MACT Subpart GG to reflect recent regulatory updates. Specialty coatings are no longer categorically exempt.
37	2.1 I	• Added specific condition for MACT Subpart PPPPP.
42	2.2 A	• Created this section for PSD Avoidance conditions. • Moved all PSD Avoidance conditions to this Section. • Clarified that all specific conditions in this section are for PSD avoidance, not PSD. There are no PSD-affected sources at this facility.
44	2.2 A.3	• Combined conditions for SO_2 and NOx PSD avoidance for ES-24B, ES-25B, and ES-26B into one specific condition. • Removed formula for calculating SO_2 emissions from these sources because the fuel limits are sufficient to demonstrate compliance.
49	2.2 A.9	• Removed monitoring/recordkeeping/reporting requirements for PSD Avoidance for the emergency generator ES-17PSG because it is no longer a peak-shaving generator and can therefore not exceed the PSD Avoidance limit.
52	2.2 A.13	• Removed formula for calculating combined operating hours because it is not needed.
55	2.2 B	• Created this section for all boilers subject to MACT Subpart DDDDD.
58	2.2 C	• Created this section for facility-wide specific conditions

Page No.	Section	Description of Changes
58	2.2 C.1	• Added rule citation for this requirement as 02D .0600. • Moved generator reporting requirement to this section. • Added a requirement to keep records of the use of the temporary boilers and temporary generators and compliance with NSPS and MACT.
58	2.2 C.2	• Rewrote specific condition for 02Q .0711 to match current DAQ format. • Removed the following TAP from the TPER table because the Permittee has previously submitted a modeling demonstration for these pollutants: o Xylene o Toluene o MIBK o MEK
n/a	2.2 N (former)	• Removed this section because all the sources covered by this section have been moved to the list of insignificant activities.

Page No.	Section	Description of Changes
60	3. (new)	• Added this Section. • Moved the list of insignificant activities to this section. • Noted that the landfills IES-01L, IES-02L, and IES-03L are closed. • Noted the capacity of landfill IES-01L, and noted this source is subject to 40 CFR Part 62, Subpart OOO. • Corrected source descriptions based on Permittee's information. • Noted that IES-03E and IES-04E are subject to MACT subpart PPPPP. • Added the following sources: o IES-27W o IES-28W o IES-01TP o IES-02FP o IES-20T o IES-21T o IES-22T • Grouped the small similar boilers and water heaters into the following groups: o IES-00B-NG-WH: gas-fired water heaters o IES-00B-O-WH: oil-fired water heaters o IES-00B-P-WH: propane-fired water heaters o IES-00B-NGO-WH: gas/oil-fired water heaters o IES-00B-NGO: gas/oil-fired boilers (MACT) o IES-00B-NG: gas-fired boilers (MACT) o IES-00B-O: oil-fired boilers (MACT) o IES-EMGEN-NEW: emergency-use generators (MACT, NSPS) o IES-EMGEN-EX: non-NSPS emergency-use generators (MACT) • Noted the total number and total capacity of the above groups. • Removed the following sources at Permittee's request: o IES-11T756E o IES-11T756EF o IES-02UST
64	4. (new)	• Created this section. • Moved General Conditions to this section. • Updated General Conditions to version 6.0.

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

6.0 Regulatory Review

Fort Liberty is subject to the following State Implementation Plan (SIP) rules, in addition to the General Conditions:

- 15A NCAC 02D .0503 "Particulate Emissions from Fuel Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
- 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .0524 "New Source Performance Standards"
- 15A NCAC 02D .0600 "Monitoring: Recordkeeping: Reporting"
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology"
- 15A NCAC 02Q .0317 "Avoidance Conditions" (PSD Avoidance)
- 15A NCAC 02Q .0711 "Emission Rates Requiring a Permit"

6.1 15A NCAC 02D .0503 "Particulate Emissions from Fuel Burning Indirect Heat Exchangers"

Applicability: This rule applies to all indirect heat exchangers (such as boilers). Each boiler at this facility is subject to this rule.

Emission limits: The emission limit for this rule is calculated by the equation $E = 1.090 \times Q^{-0.2594}$, where E is the particulate emission limit in lb/MMBtu and Q is the combined heat input of each emission source subject to this rule. Q is determined when an emission source is added to the permit, and is not subsequently recalculated when other sources subject to this rule are added to (or removed from) the permit. As a result, different boilers can have different emission limits under this rule.

***E* for boilers under 02D .0503**	
Boiler	**Limit**
ES-01CMA[5]	0.19
ES-02CMA[5]	0.19
ES-03CMA[5]	0.19
ES-11B	0.23
ES-12B	0.23
ES-24B	0.20
ES-25B	0.20
ES-26B	0.20
ES-27B	0.20
ES-28B	0.20
ES-30B	0.23
ES-31B	0.23
ES-32B	0.23
ES-35B	0.19
ES-36B	0.19
ES-37B	0.19
ES-38B	0.19
ES-39B	0.19

[5] The existing permit does not include an emission limit for this source. Based on when these sources were added to the permit (revision T33, issued October 29, 2010), the facility-wide Q was 903.56, and therefore E was 0.19.

***E* for boilers under 02D .0503**	
Boiler	**Limit**
ES-40B	0.19
ES-41B	0.19
ES-42B	0.19
ES-43B	0.19
ES-TEMPBOIL[6]	0.18
ES-44B[7]	0.19
ES-45B[7]	0.19
ES-46B[7]	0.19
ES-FORSCOM1[7]	0.19
ES-FORSCOM2[7]	0.19
ES-FORSCOM3[7]	0.19
ES-647B[8]	0.18
ES-648B[8]	0.18
ES-922B[8]	0.18
ES-943B[8]	0.18
ES-944B[8]	0.18
ES-945B[8]	0.18

The subject sources at this facility can burn natural gas and No. 2 fuel oil. In order to calculate PM emissions from the combustion of these fuels, the emission factors published by EPA in AP-42 can be applied. The published emission factors are not in units of pounds per million Btu, so the emission factor must be converted:

- PM from natural gas (AP-42 Chapter 1.4, Table 1.4-2; PM [Total]):

  $$\frac{7.6\text{ lb}}{\text{million scf}} \times \frac{1\text{ scf}}{1{,}020\text{ Btu}} = \frac{0.007\text{ lb}}{\text{million Btu}}$$

  Therefore, natural gas is expected to comply with the PM limit by a wide margin.

- PM from No. 2 fuel oil (AP-42 Chapter 1.3, Tables 1.3-1 and 1.3-2; Filterable PM + CPM-TOT):

  $$\frac{[2+1.3]\text{ lb}}{1{,}000\text{ gal}} \times \frac{1{,}000\text{ gal}}{140\text{ million Btu}} = \frac{0.023\text{ lb}}{\text{million Btu}}$$

  Note that AP-42 Chapter 1.3 differentiates emission factors for sources with heat input greater than or less than 100 million Btu per hour. However, the PM emission factor is the same for either

[6] The existing permit includes the formula for *E* instead of a specific limit for this source. This source was added to the permit with the T28 permit revision (issued February 7, 2008). At that time, *Q* was determined to be 1,023.97. Therefore, *E* was 0.18.
[7] The existing permit does not include an emission limit for this source. These sources were added to the permit with the T30 revision (issued December 9, 2009). *Q* was not determined during that revision. *Q* was determined to be 1,023.97 as part of the T28 revision (see note 6). The T29 revision increased *Q* by 2.095, and the T30 revision reduced *Q* by 99.75. Therefore, at the time these sources were added, *Q* was 924.2, and therefore *E* was 0.185, which rounds to 0.19.
[8] These boilers were originally added to the permit with the T38 permit revision (issued October 28, 2013). At that time, *Q* was determined to be 1,050.75. Therefore, *E* was 0.18.

case. Based on the above, No. 2 fuel oil is expected to comply with the PM limit by a wide margin.

Monitoring, Recordkeeping, and Reporting: Based on the wide margin of compliance for natural gas, propane, and No. 2 fuel oil, DAQ has determined that no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 15A NCAC 02D .0503. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

Compliance: Fort Liberty is expected to remain in compliance with this rule.

Changes to the existing permit:

- The existing permit does not include a specific condition for 02D .0503 for the following boilers: ES-01CMA, ES-02CMA, ES-03CMA, ES-44B, ES-45B, ES-46B, ES-647B, ES-648B, ES-922B, ES-943B, ES-944B, and ES-945B. A specific condition will be added for these sources. Note that no monitoring, recordkeeping, and reporting will be required for these sources to demonstrate compliance with this rule.

- The existing permit does not include a specific limit for ES-TEMPBOIL. The specific limit (0.18) will be added to the permit. Note that this change will not affect Fort Liberty's compliance requirements with regards to ES-TEMPBOIL.

- The existing permit requires recordkeeping for the amount of natural gas burned in boilers ES-TEMPBOIL, ES-24B, ES-25B, ES-26B, ES-36B, and ES-37B. This is not necessary, because the amount of natural gas burned will not affect the boiler's ability to comply with this rule. Therefore, this requirement will be removed from the permit. Note that NSPS Subpart Dc still requires records of fuel usage for boilers subject to that rule.

6.2 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"

Applicability: This rule applies to emission sources that exhaust through a stack and are not subject to another particulate matter (PM) emission limit. At this facility, the spray booths (ES-01C, ES-02C, ES-08C, ES-10C, and ES-12C), the paper pulverizer (ES-01P), and plasma cutter (ES-01PC) are subject to this rule. Other emission sources at this facility are subject to another PM emission limit (e.g., boilers are subject to 02D .0503) and are therefore not subject to this rule.

Emission limit: The emission limit for this rule is calculated by the equations $E = 4.10 \times P^{0.67}$ (for $P \leq 30$) or $E = 55(P)^{0.11} - 40$, where E is the emission limit in pounds per hour and P is the process rate of the emission source measured in tons per hour. The equation is listed in the permit as the emission limit (as opposed to 02D .0503, which calculates E and includes the result in the permit).

Monitoring: In order to demonstrate compliance with the PM emission limit, Fort Liberty operates various types of fabric filters for each of the subject sources. Fort Liberty must conduct a monthly and annual inspection of the filters. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

Recordkeeping and reporting: Fort Liberty must keep records of control device inspections and maintenance and submit a semiannual summary report.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

6.3 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"

Applicability: This rule applies to combustion sources that are not subject to an SO_2 emission limit under NSPS or MACT.

- Oil-fired boilers that are subject to NSPS Subpart Dc are subject to an SO_2 limit.
- All engines that are subject to NSPS Subpart IIII are subject to an SO_2 limit.
- The turbine ES-33B is subject to NSPS Subpart GG, which includes an SO_2 limit.

The above-mentioned sources are therefore not subject to this rule because those rules include SO_2 emission limits. All other combustion sources are subject to this rule.

Emission limit: In all cases, the emission limit is 2.3 pounds of SO_2 per million Btu of heat input. In general, SO_2 emitted by combustion sources is a function of the amount of sulfur present in the fuel. Fuel burning sources at this facility can burn natural gas, propane, and No. 2 fuel oil. In order to calculate SO_2 emissions from the combustion of these fuels, the emission factors published by EPA in AP-42 can be applied. The published emission factors are not in units of pounds per million Btu, so the emission factor must be converted:

- SO_2 from natural gas (AP-42 Chapter 1.4, Table 1.4-2; SO_2):

  $$\frac{0.6\ \text{lb}}{\text{million scf}} \times \frac{1\ \text{scf}}{1{,}020\ \text{Btu}} = \frac{0.001\ \text{lb}}{\text{million Btu}}$$

  Therefore, natural gas is expected to comply with the SO_2 limit by a wide margin.

- SO_2 from propane (AP-42 Chapter 1.5, Table 1.5-1; SO_2, S=0.18):

  $$\frac{[0.1 \times 0.18]\ \text{lb}}{1{,}000\ \text{gal}} \times \frac{1{,}000\ \text{gal}}{91.5\ \text{million Btu}} = \frac{0.0002\ \text{lb}}{\text{million Btu}}$$

  Therefore, propane is expected to comply with the SO_2 limit by a wide margin.

- SO_2 from No. 2 fuel oil burned in a boiler (AP-42 Chapter 1.3, Table 1.3-1; SO_2, S=0.5):

  $$\frac{[142 \times 0.5]\ \text{lb}}{1{,}000\ \text{gal}} \times \frac{1{,}000\ \text{gal}}{140\ \text{million Btu}} = \frac{0.51\ \text{lb}}{\text{million Btu}}$$

  Note that AP-42 Chapter 1.3 differentiates emission factors for sources with heat input greater than or less than 100 million Btu per hour. However, the SO_2 emission factor is the same for either case. The value of *S* is based on the sulfur content limit in NSPS Subpart Dc.[9] Based on

[9] Note that some boilers at this facility are not subject to NSPS Subpart Dc. However, it is unlikely that Fort Liberty will receive fuel oil that does not comply with the NSPS Subpart Dc limit given that the majority of oil-fired boilers are subject to the NSPS. Furthermore, considering the presence of many emergency engines subject to NSPS Subpart IIII, it is expected that nearly all fuel oil at the facility will comply with the NSPS Subpart IIII sulfur content limit of 15ppm (i.e., *S* = 1.5E-4).

the above, No. 2 fuel oil with S=0.5 fired in a boiler is expected to comply with the SO_2 limit by a wide margin.

- SO_2 from diesel fuel burned in an engine with capacity less than 600 horsepower (AP-42 Chapter 3.3, Table 3.3-1; SO_2): 0.29 pounds per million Btu. Therefore, diesel fuel fired in an engine with capacity less than 600 horsepower is expected to comply with the SO_2 limit by a wide margin.

- SO_2 from diesel fuel burned in an engine with capacity greater than 600 horsepower (AP-42 Chapter 3.4, Table 3.4-1; SO_2, S=0.5): [1.01×0.5] = 0.5005 pounds per million Btu. Therefore, diesel fuel fired in an engine with capacity greater than 600 horsepower is expected to comply with the SO_2 limit by a wide margin.

Monitoring, Recordkeeping, and Reporting: Based on the wide margin of compliance for natural gas, propane, and No. 2 fuel oil, DAQ has determined that no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 15A NCAC 02D .0516. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

Compliance: Fort Liberty is expected to remain in compliance with this rule.

Changes to the existing permit: The existing permit requires recordkeeping for the amount of natural gas burned in the boiler ES-34B. This is not necessary, because the amount of natural gas burned will not affect the boiler's ability to comply with this rule. Therefore, this requirement will be removed from the permit. Note that NSPS Subpart Dc still requires records of fuel usage for boilers subject to that rule.

6.4 15A NCAC 02D .0521 "Control of Visible Emissions"

Applicability: This rule applies to sources of visible emissions (VE) that are not subject to another VE standard under 02D .0500. Generally, this rule is not applied to sources that are not expected to produce any VE (*e.g.*, from a storage tank). Some boilers are subject to a VE standard under NSPS Subpart Dc, and are therefore not subject to this rule.

Emission limits: The VE limit for this rule depends on the construction date of the individual source in question. At this facility, the VE limit is 20% for each source subject to this rule. The rule allows for one exceedance of the specific limit per hour, and four exceedances per 24-hour period.

Monitoring: Monitoring for this rule depends on the specific source:

- Boilers, turbine, and generators: DAQ has previously determined that no specific monitoring, recordkeeping, or reporting is required for these sources to demonstrate compliance with the VE emission limit.

- Spray booths, paper pulverizer, plasma cutter: Fort Liberty must conduct a monthly visual inspection to ensure that VE from the spray booths is normal.

DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

Recordkeeping and reporting: Fort Liberty must keep records of VE observations and submit a semiannual summary report.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule.

Changes to the existing permit:

- The existing permit does not include a specific condition for this rule for ES-34B. Instead, the existing permit included a VE limit under NSPS Subpart Dc for this boiler. As discussed in Section 7.1.1, this boiler is not subject to a VE limit under NSPS Subpart Dc. Therefore, this boiler is subject to 02D .0521.

- The existing permit includes a specific condition for this rule for ES-TEMPBOIL. That boiler is subject to a VE limit under NSPS Subpart Dc and therefore is not subject to this rule.

6.5 15A NCAC 02D .0524 "New Source Performance Standards" (NSPS)

This rule incorporates the NSPS rules in 40 CFR Part 60 into North Carolina's SIP. See Section 7.1 for a discussion of NSPS rules that apply to this facility.

6.6 15A NCAC 02D .0600 "Monitoring: Recordkeeping: Reporting"

Applicability: This rule broadly covers requirements for monitoring, recordkeeping, and reporting for permits issued by DAQ. DAQ has previously determined it necessary that Fort Liberty maintain an up-to-date list of the emergency generators at the facility. This condition has been included in the permit since at least the R18 revision of the permit (issued December 21, 1999), which is the earliest version of the permit available in DAQ's database.

Recordkeeping and reporting: The existing permit includes a specific condition that requires Fort Liberty to maintain this list and submit it semiannually to DAQ. In addition, Fort Liberty must keep records of the use of the temporary boilers and generators.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this requirement. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit:

- The existing permit includes this requirement, but does not include any rules citation. The permit will be updated to show that this rule is incorporated into the permit under 02D .0600. Furthermore, the specific condition for this rule has been reformatted to match DAQ's standard format.

- The new permit will include a requirement that Fort Liberty keep records of the use of temporary boilers and generators.

6.7 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT)

This rule incorporates the MACT rules in 40 CFR Part 63 into North Carolina's SIP. See Section 7.2 for a discussion of MACT rules that apply to this facility.

6.8 15A NCAC 02Q .0317 "Avoidance Conditions" (PSD Avoidance)

Background: A facility may accept an enforceable emission limit or operating limit in order to avoid the applicability of specific rules (see 02Q .0317(a)). Fort Liberty has previously accepted several emission limits

in order to avoid applicability of 15A NCAC 02D .0530 "Prevention of Significant Deterioration" (PSD). See Section 7.3 for a discussion of Fort Liberty's requirements under PSD.

Applicability (existing permit): Fort Liberty has accepted several different emission limits for different emission sources in order to avoid PSD.

Emission Sources	PSD Avoidance Emission Limit(s)	First added with revision:
ES-01CMA, ES-02CMA, and ES-03CMA	NOx: 44.42 tpy	T33 (October 29, 2010)
ES-11B and ES-12B	SO_2: 40 tpy	R18 (December 21, 1999)[10]
ES-24B, ES-25B, and ES-26B	NOx: 40 tpy SO_2: 40 tpy	T20 (December 14, 2000)
ES-30B, ES-31B, and ES-32B	SO_2: 40 tpy	T25 (April 13, 2006)
ES-33B and ES-34B	NOx: 75 tpy	T23 (March 14, 2003)
ES-35B	SO_2: 40 tpy	T25 (April 13, 2006)
ES-36B and ES-37B	SO_2: 40 tpy	
ES-38B and ES-39B	SO_2: 40 tpy	
ES-40B, ES-41B, ES-42B, and ES-43B	SO_2: 40 tpy	
ES-TEMPBOIL, ES-TEMPGEN1500A, ES-TEMPGEN1500B, ES-TEMPGEN900A, and ES-TEMPGEN900B	NOx: 40 tpy	T28 (April 7, 2008)
ES-44B, ES-45B, and ES-46B	NOx: 50 tpy	T30 (December 9, 2009)
ES-17PSG	NOx: 40 tpy	T37 (July 29, 2013)
ES-80G, ES-81G, ES-82G, ES-83G, ES-84G, ES-85G, ES-86G, ES-FORSCOM1, ES-FORSCOM2, and ES-FORSCOM3*	NOx: 39.59 tpy**	T30 (December 9, 2009)
ES-91G, ES-92G, ES-93G, and ES-94G	NOx: 39.61 tpy	T35 (October 27, 2011)

* ES-84G, ES-85G, and ES-86G have been removed from the permit as requested by application .22A

** Application .22A requested this limit be changed to reflect the removal of ES-84G, ES-85G, and ES-86G. However, there is no need to change a PSD

[10] This is the earliest permit available in DAQ's electronic database.

avoidance limit for a group of sources when one (or more) of those sources are removed.

Applicability (current applications): Applications .20A, .21A, and .22A each propose to add several new emergency generators and boilers. The combined potential emissions from these sources could potentially trigger PSD applicability. However, each of the proposed emission sources should be considered separately for PSD applicability because they are each independent and not substantially related to the others. See Section 7.3 for a discussion of the applicability of PSD to these new sources.

Monitoring and recordkeeping: In order to demonstrate compliance with the various emission limits, Fort Liberty must keep track of the fuel used in each source subject to a PSD avoidance limit (note that only fuel-burning sources are subject to PSD avoidance limits at this facility). Using the records of fuel use and the emission factors listed in the permit, Fort Liberty can demonstrate that no PSD avoidance limit is exceeded.

Reporting: Fort Liberty must submit a semiannual summary report of the monitoring and recordkeeping activities.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit:

- The PSD avoidance limits for ES-17PSG, ES-33B and ES-34B are included in the permit under specific conditions for 02D .0530, implying that they are PSD requirements. This is incorrect; these limits are for *avoidance* of PSD, and therefore should be incorporated under 02Q .0317. The new permit will correct this error. This change will not affect Fort Liberty's compliance requirements.

- The generator ID No. ES-17PSG is being reclassified from a peak-shaving generator to an emergency-use generator. Potential emissions from a peak-shaving generator are based on 8,760 hours per year (i.e., full-time operation), whereas potential emissions from emergency generators are based on 500 hours per year.[11] Potential emissions from this generator can be recalculated using the formula found in the existing permit:

$$A = 2700\ kW \times \frac{1.341\ hp}{kW} \times (B)\ \frac{lbs\ NO_x}{hp-hr} \times (C)\ \frac{hrs}{month} \times \frac{1\ ton\ NOx}{2000\ lbs\ NO_x}$$

  Where *A* is the total NOx emissions, *B* is the AP-42 emission factor for NOx from a large diesel-fired engine (2.4E-02 lb_{NOx}/hp-hr), and *C* is 500 hours of operation,[12] the potential NOx emission rate from ES-17PSG is 21.72 tpy. Because this value is less than the 40 tpy PSD avoidance limit, no monitoring, recordkeeping, or reporting will be required for ES-17PSG to demonstrate compliance with the PSD avoidance limit. Those requirements will be removed from the permit.

- The existing permit includes fuel input limits for the boilers ES-24B, ES-25B, and ES-26B, and also includes a formula to calculate SO_2 emissions from these boilers. Based on the fuel input limits in the

[11] See "*Calculating Potential to Emit (PTE) for Emergency Generators*", John Seitz, Director, OAQPS, EPA, September 6, 1995.
[12] The formula in the existing permit is used to calculate monthly emissions. In this case, the formula can be used to calculate annual emissions if *C* is in units of hr/yr.

existing permit (570 million cubic feet of natural gas and 986,000 gallons of fuel oil), the potential SO_2 annual emissions from these boilers can be calculated using the formula found in the existing permit:

$$X = Y \times 0.6 \frac{lbs\ sulfur\ dioxide}{million\ cubic\ feet} + Z \times \frac{142\ lbs\ sulfur\ dioxide}{1000\ gallon\ fuel\ oil} \times S$$

Where *X* is the total SO_2 emissions, *Y* is the total amount of natural gas burned in these boilers, *Z* is the total amount of fuel oil burned in these boilers, and *S* is the fuel oil sulfur content (*S*=0.5, as required by NSPS Subpart Dc). Using this formula, the potential SO_2 emitted from these boilers is 35.17 tpy. Because this value is less than the 40 tpy PSD avoidance limit, no additional emission calculations are required; compliance with the fuel input limits is sufficient to show compliance with the PSD avoidance limit. Therefore, this specific emission calculation requirement will be removed from the permit.

- The specific conditions for PSD avoidance in the existing permit will be reformatted to match DAQ's standard format for Title V permit conditions. Changes to formatting are for clarity and conformity with DAQ's other permits, and are not intended to affect Fort Liberty's compliance requirements.

6.9 15A NCAC 02Q .0711 "Emission Rates Requiring a Permit"

Applicability: In general, this rule applies to sources that construct a new facility (see 02Q .0704) or make a modification (see 02Q .0706) that cause an increase in TAP emission rates, and the TAP emission rates are less than the TAP permitting emission rates (TPER) listed in 02Q .0711. The existing permit includes a specific condition for this rule. Emission sources that are exempt per 02Q .0702 are not subject to these requirements. See Section 8.0 for further discussion of Fort Liberty's requirements with regards to TAP emissions.

Monitoring, recordkeeping, and reporting: Fort Liberty must keep records that demonstrate the listed TPERs are not exceeded. No reporting is required. Note that the permit explicitly states that a "surge condition" resulting from a national security emergency is not to be considered in determining compliance with this rule.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit: The TPER table in the existing permit includes several TAPs for which Fort Liberty has already submitted a modeling demonstration. Therefore, those TAPs need not be referenced in the permit under 02Q .0711, and will be removed.

7.0 NSPS, NESHAP/MACT, PSD, §112(r), CAM, and 40 CFR Part 62

7.1 New Source Performance Standards (NSPS; 40 CFR Part 60)

7.1.1 NSPS Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"

Applicability: This rule applies to "steam generating units" (defined by the rule) that were constructed/modified/reconstructed after June 9, 1989 and have a heat input capacity between 10 and 100 million Btu per hour, except as provided in §60.40c(e)-(i).

- The following boilers have heat input capacities outside the range, and are therefore not subject to this rule:

Boilers not subject to NSPS Dc due to capacity:
ES-30B
ES-31B
ES-32B
ES-38B[13]
ES-39B[13]
ES-40B
ES-41B
ES-42B
ES-43B
ES-FORSCOM1
ES-FORSCOM2
ES-FORSCOM3
ES-922B

- The following boilers were constructed before the applicability date and have not been modified or reconstructed since the applicability date:

Boilers constructed before the applicability date of NSPS Dc:
ES-11B
ES-12B
ES-27B
ES-28B

- Considering the above exclusions, the following boilers at Fort Liberty are subject to this rule:

Boilers subject to NSPS Dc, Constructed before 2005			
ID No.	**Capacity (MMBtu/hr)**	**Fuel Type**	**Group (see next section)**
ES-24B	23.4	NG,No.2	(2)
ES-25B	23.4	NG,No.2	(2)
ES-26B	10	NG,No.2	(2)
ES-34B	61.2	NG	(3)

[13] The existing permit erroneously lists these boilers as subject to the rule.

Boilers subject to NSPS Dc, Constructed after 2005			
ID No.	**Capacity (MMBtu/hr)**	**Fuel Type**	**Group (see next section)**
ES-01CMA	41	NG,No.2	(1)
ES-02CMA	41	NG,No.2	(1)
ES-03CMA	41	NG,No.2	(1)
ES-35B	72.3	NG,No.2	(1)
ES-36B	10.5	NG,No.2	(2)
ES-37B	10.5	NG,No.2	(2)
ES-44B	45.42	NG,No.2	(1)
ES-45B	45.42	NG,No.2	(1)
ES-46B	45.42	NG,No.2	(1)
ES-TEMPBOIL	100	NG,No.2	(1)

Temporary boilers: NSPS Dc does not apply to "temporary boilers" as defined by the rule (see 40 CFR 60.40c(i)). The rule defines a temporary boiler in 40 CFR 60.41c:

> *Temporary boiler* means a steam generating unit that…is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists: …
>
> (2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

There are two boilers on the list of permitted sources that are described as "temporary": ES-35B and ES-TEMPBOIL. Although Fort Liberty considers these units to be temporary, they do not meet the definition above because they may operate for longer than 180 days. Therefore, they are not temporary according to NSPS Subpart Dc.

Heat recovery steam generators: NSPS Subpart Dc does not apply to heat recovery steam generators (HRSG) *only if* that unit is associated with a stationary combustion turbine subject to NSPS Subpart KKKK (see 40 CFR 60.40c(e)). The boiler ES-34B is a HRSG associated with a stationary combustion turbine (ID No. ES-33B), but that turbine is subject to NSPS Subpart GG, not KKKK. Therefore, the boiler ES-34B is subject to NSPS Subpart Dc.

Requirements: The requirements of this rule differ based on the size, fuel types, and construction date of the boiler in question. Broadly, there are three groups of boilers at Fort Liberty with regards to NSPS Subpart Dc:

(1) Oil-fired, capacity greater than 30 MMBtu/hr
(2) Oil-fired, capacity less than 30 MMBtu/hr
(3) Gas-fired

The rule includes emission limits for SO_2, PM, and VE depending on these groups. The rule also includes monitoring and recordkeeping.

SO_2 emission limit: NSPS Subpart Dc includes limits for SO_2 for oil-fired boilers (groups (1) and (2) above; see 40 CFR 60.42c(d)). As an alternative to a specific SO_2 limit, the rule allows for facilities to show compliance by limiting oil burned in those boilers have a sulfur content of less than 0.5% by weight (see 40 CFR 60.42c(d) and 40 CFR 60.42c(h)(1)). There is no SO_2 limit for gas-fired boilers (group (3)).

PM emission limit: NSPS Subpart Dc includes PM emission limits only for oil-fired boilers (group (1) above; see 40 CFR 60.42c(e)(1)). However, for oil-fired boilers constructed after February 28, 2005 and that only fire fuel with a sulfur content less than 0.5%, the rule explicitly states that such boilers are not subject to the PM emission limit (see 40 CFR 60.43c(e)(4)). Because each boiler will only fire fuel oil with sulfur less than the limit, there are no boilers at Fort Liberty with a PM limit under NSPS Subpart Dc.

VE emission limit: NSPS Subpart Dc includes limits for VE for oil-fired boilers with capacity greater than 30 million Btu per hour (group (1) above; see 40 CFR 60.43c(c)). VE is limited to 20% opacity. Although this rule requires a continuous opacity monitor in some cases, no such system is required at Fort Liberty because the facility only burns fuel oil with a sulfur content less than 0.5% (see 40 CFR 60.47c(c)).

Monitoring, recordkeeping, and reporting: The rule requires Fort Liberty to keep records of the amount of fuel burned in the boilers (see 40 CFR 60.48c(g)(2)) and to keep records of fuel oil certification (see 40 CFR 60.48c(f)). In addition, Fort Liberty must conduct VE monitoring for the group (1) boilers (see 40 CFR 60.47c(a)).

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit:

- The existing permit includes a PM emission limit for the boilers ES-44B, ES-45B, and ES-46B. As stated above, 40 CFR 60.42c(e)(4) explicitly states that these boilers are not subject to the PM emission limit. The new permit will not include a PM limit for these sources.

- The existing permit does not include the VE monitoring requirements under 40 CFR 60.47c(a). The permit will be updated to include these requirements where appropriate. Note that, according to the most recent inspection report, Fort Liberty is complying with the VE monitoring requirement despite the permit not including those requirements.[14]

- In the existing permit, the boilers ES-38B and ES-39B are listed as being subject to this rule. These boilers have a heat input capacity of 9.64 million Btu per hour, which is less than the applicability threshold of 10 million Btu per hour. Therefore, they are not subject to this rule. References to this rule and these boilers will be removed from the permit.

- In the existing permit, the boiler ES-34B is associated with the opacity limit under 40 CFR 60.43c(c). That opacity limit only applies to boilers with capacities greater than 30 MMBtu/hr and combust a fuel other than natural gas. As discussed below, the opacity limit does not apply to ES-34B.

  ES-34B is a boiler used as a heat recovery steam generator (HRSG) in conjunction with the combustion turbine ES-33B (this turbine is subject to NSPS Subpart GG). The turbine can burn both oil and gas, but the HRSG can *only* burn natural gas. According to 40 CFR 60.40c(e): "If the [HRSG] is subject to this subpart, only emissions resulting from combustion of fuels in the [HRSG] are subject to this

[14] See DAQ's inspection report from February 10, 2022, page 19.

subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)"

Therefore, although the turbine can burn oil, that fact is not relevant to the associated HRSG's compliance requirements under this rule. The permit will be corrected to remove this requirement. Note that this boiler will still be subject to an opacity limit under 15A NCAC 02D .0521.

- NSPS Subpart Dc requires recordkeeping of fuel used in each subject boiler (see 40 CFR 60.48(g)). This requirement is not clearly stated throughout the existing permit. In the new permit, this requirement will be made clear for each subject boiler.

- The specific conditions for NSPS Subpart Dc in the existing permit do not follow the format of DAQ's other Title V permits; these conditions will be reformatted in the new permit. This formatting change does not reflect a physical change at the facility, and is not intended to affect Fort Liberty's compliance requirements.

7.1.2 NSPS Subpart E "Standards of Performance for Incinerators" [not applicable]

Applicability: Fort Liberty operates two small pet incinerators (ID Nos. IES-04I and IES-05I). These incinerators are included in the list of insignificant activities and not referenced in the body of the Title V permit. DAQ previously determined that no NSPS rules applied to these incinerators.[15] Therefore, this rule (and other NSPS rules that cover incinerators) does not apply to this facility.

7.1.3 NSPS Subpart GG "Standards of Performance for Stationary Gas Turbines"

Applicability: This rule applies to stationary combustion turbines constructed, reconstructed, or modified after October 3, 1977 (see 40 CFR 60.330(b)). The turbine (ID No. ES-34B) was constructed after that date, so this rule applies to the turbine. The turbine is a lean premix gas-fired turbine.[16]

Standards: The emission standards of this rule differ based on the turbine. Broadly, this rule includes emission limits for NOx and SO_2.

- NOx: The NOx limits for this rule are under 40 CFR 60.332(a). However, per 60.332(g), emergency turbines are not subject to the requirements of 40 CFR 60.332(a).

- SO_2: A facility must limit SO_2 from a turbine based on either an output concentration basis or by limiting the sulfur content of the fuel. Fort Liberty uses the sulfur content limit (0.8% sulfur by weight, see 40 CFR 60.333(b)). There is no exemption for emergency units.

Emergency turbines: On March 31, 2023, Fort Liberty submitted an amendment to application .21A requesting that this turbine be reclassified as emergency-use. Per 40 CFR 60.331(e), an emergency turbine is "any stationary gas turbine which operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation."

Monitoring and recordkeeping: Fort Liberty must monitor the sulfur content of the natural gas and fuel oil burned in the turbine. There is no monitoring or recordkeeping associated with NOx emissions for this turbine because it is an emergency unit and, as stated above, the NOx limit does not apply to this unit.

[15] See DAQ's review of the T25 permit revision (issued April 13, 2006), page 10.
[16] See DAQ's review of the T23 permit revision (issued March 14, 2003), page 3.

Reporting: Fort Liberty must submit a semiannual summary report.

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit: The specific condition for this rule will be updated to indicate the turbine ES-33B is an emergency-use unit.

7.1.4 NSPS Subpart WWW "Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014" [not applicable]

Applicability: This rule applies to landfills that were constructed, reconstructed, or modified after May 30, 1991, but before July 18, 2014 (see 40 CFR 60.750(a)). The Longstreet Landfill was constructed after this date. However, according to 40 CFR 60.750(d), a landfill no longer must comply with this rule after it becomes subject to a plan that implements NSPS Subpart Cf. Although that Subpart is not included in North Carolina's SIP, the landfill is subject to 40 CFR Part 62, Subpart OOO which, in effect, implements NSPS Subpart Cf. Therefore, the Longstreet Landfill is no longer subject to NSPS Subpart WWW.

7.1.5 NSPS Subpart XXX "Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014" [not applicable]

Applicability: This rule applies to landfills that were constructed, reconstructed, or modified after July 17, 2014 (see 40 CFR 60.760(a)). Each of the three landfills were constructed and closed before that date, and none of the landfills have been modified after that date. Therefore, this rule does not apply to this facility.

7.1.6 NSPS Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"

Applicability: This rule applies to stationary compression ignition internal combustion engines (CI ICE) constructed or modified after the applicability dates in 40 CFR 60.4200(a)(2). For the purposes of this rule, each engine at this facility is an emergency-use CI ICE.

The following table shows the permitted engines at this facility that are not subject to NSPS Subpart IIII due to their construction date:

Engines Not Subject to NSPS Subpart IIII
ES-04PSG
ES-16PSG
ES-17PSG
ES-24G
ES-25G
ES-26G
ES-33G
ES-37G
ES-38G

Note that engines operated in test stands (ID Nos. ES-01E, ES-02E, IES-03E, and IES-04E) are not subject to this rule (see 40 CFR 60.4200(b)).

Insignificant activities: Note that there are many engines at this facility included in the list of insignificant activities. Insignificant activities are not referenced in the body of the Title V permit, but those sources must still comply with applicable rules, such as NSPS Subpart IIII.

Emission standards: Emergency CI engines subject to this rule must be certified to meet the applicable emission standards in 40 CFR 60.4205(b).

Fuel requirements: Diesel fuel must meet the sulfur requirements in 40 CFR 1090.305 (a.k.a. ultra-low sulfur diesel).

Monitoring requirements: Fort Liberty must install a non-resettable hour meter on each emergency engine. The engines must only be operated such that they meet the definition of emergency engine (i.e., not operated as a peak shaving engine).

Compliance requirements: The engines must be operated with good work practices and according to manufacturer's instructions. To be designated as an emergency engine, the engine can operate for non-emergency purposes (*e.g.*, maintenance testing) for less than 100 hours per year. Up to 50 of those hours can be for non-emergency use, except for peak-shaving (with rare exceptions).

Compliance: Based on the most recent inspection report, Fort Liberty appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit:

- In the existing permit, one engine subject to NSPS Subpart IIII is designated as "peak-shaving" (i.e., not an emergency-use engine). According to application .20A, this engine no longer is used as a peak-shaving engine, and is now instead an emergency-use engine. Therefore, references to non-emergency requirements under NSPS Subpart IIII will be removed from the permit.

- In the existing permit, there are several permitted emergency-use engines that are designated as "fire pumps." Although fire pumps are generally considered emergency-use engines, the requirements for these engines are slightly different under NSPS Subpart IIII. However, every fire pump engine has been moved to the list of insignificant activities, and therefore will not be referenced within the body of the Title V permit. Therefore, references to requirements that apply exclusively to fire pumps will be removed from the permit.

7.1.7 NSPS Subpart KKKK "Standards of Performance for Stationary Combustion Turbines" [not applicable]

Applicability: This rule applies to stationary combustion turbines constructed, reconstructed, or modified after February 18, 2005 (see 40 CFR 60.4300). The turbine (ID No. ES-34B) was constructed before that date, and has not been modified or reconstructed after that date. Therefore, this rule does not apply to this facility.

7.1.8 NSPS Subpart TTTT "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units" [not applicable]

Applicability: This rule applies to electric generating units constructed, reconstructed, or modified after January 8, 2014 (see 40 CFR 60.5508). The turbine (ID No. ES-34B) was constructed before that date, and has not been modified or reconstructed after that date. Therefore, this rule does not apply to this facility.

7.2 Maximum Achievable Control Technology (MACT; 40 CFR Part 63)

Fort Liberty is a major source of hazardous air pollutants because it has potential emissions of HAP greater than the thresholds listed in the definition of "major source" in 40 CFR 63.2. Because this facility is a major source of HAP, rules that apply exclusively to area sources of HAP (e.g., Subpart JJJJJJ) categorically do not apply to this facility.

7.2.1 MACT Subpart GG "National Emission Standards for Aerospace Manufacturing and Rework Facilities"

Applicability: This rule applies to facilities are major sources of HAP and that are engaged in the manufacture or rework of aerospace vehicles and components. The specific parts of a facility that are subject to this rule are listed in 40 CFR 63.741(c), and activities exempt from this rule are listed in 40 CFR 63.741(f). At this facility, the spray booths ES-10C and ES-12C and their associated control devices (a thermal oxidizer and panel filter, respectively) are subject to this rule.

Title V permitting: Per 40 CFR 63.741(d), a facility subject to this rule is required to obtain a permit under 40 CFR Part 70 (i.e., a Title V permit) regardless of potential emissions from the facility.

Standards: The rule includes standards and work practice requirements for the following categories of activities: cleaning, coating application, depainting operations, milling maskant application, and waste storage. For each category, the rule allows multiple options to demonstrate compliance, such as with compliant materials or the use of control devices.

Monitoring and recordkeeping: The rule requires monitoring and recordkeeping for material usage, material contents, and control device parameters.

Reporting: The rule requires summary reports to be submitted semiannually.

Changes to the existing permit:

- This rule was updated on December 7, 2015. Previously, the rule did not include control requirements for specialty coatings. After the update, the rule does have requirements for specialty coatings, but "provides an exemption for primers, topcoats, and chemical milling maskants used in low volumes, which is defined as 189 liters (50 gallons) or less per formulation, and for which the combined annual total does not exceed 757 liters (200 gallons)."[17] The permit will be updated to include this threshold for exemption and the standards for specialty coatings.

- The existing permit makes several references to a waterwash filter system. MACT Subpart GG has standards for such a system, but Fort Liberty does not use this kind of control device. These references will be removed from the permit.

[17] See 80 FR 76155.

- The specific condition for MACT Subpart GG in the existing permit is not in the format DAQ currently uses. In the renewed permit, this condition will be reformatted to match DAQ's current format. Formatting changes are not intended to affect Fort Liberty's compliance requirements.

7.2.2 MACT Subpart YYYY "National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines"

Applicability: This rule applies to stationary combustion turbines located at major sources of HAP (see 40 CFR 63.6085). The turbine ES-33B is subject to this rule.

Duct burners and waste heat recovery units: The turbine ES-33B is associated with a heat recovery steam generator (HRSG; ID No. ES-34B). This rule explicitly does not apply to "waste heat recovery units" (i.e., HRSG):

> **40 CFR 63.6092 Are duct burners and waste heat recovery units covered by subpart YYYY?**
>
> No, duct burners and waste heat recovery units are considered steam generating units and are not covered under this subpart. In some cases, it may be difficult to separately monitor emissions from the turbine and duct burner, so sources are allowed to meet the required emission limitations with their duct burners in operation.

Requirements: The requirements of this rule are based on the turbine's subcategory under this rule. DAQ initially determined that ES-33B was a new turbine in the lean premix gas-fired category.[18] The requirements of this subcategory were initially stayed in 2004. In 2021, EPA reinstated requirements for this subcategory with an initial compliance date of March 9, 2022.

According to Fort Liberty, this turbine has run infrequently in recent years due to equipment and vendor problems. Therefore, no initial compliance demonstration has been performed because the turbine has not been successfully operated since the initial compliance date.

On March 31, 2023, Fort Liberty submitted an amendment to application .21A requesting that this turbine be reclassified as emergency-use. According to 40 CFR 63.6090(b)(1)(i), emergency-use turbines do not have to meet the requirements of Subpart YYYY. The rule defines an emergency turbine as (40 CFR 63.6175):

> *Emergency stationary combustion turbine* means any stationary combustion turbine that operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency stationary combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary combustion turbines.

[18] See DAQ's application review for the T24 permit revision (issued December 22, 2004).

Monitoring, recordkeeping, and reporting: As stated above, there are no monitoring, recordkeeping, or reporting requirements for emergency-use turbines under this rule.

Compliance: Fort Liberty appears to be in compliance with this rule.

Changes to the existing permit: The existing permit does not include a specific condition for this rule. The new permit will include a specific condition that states this turbine meets the definition of "emergency stationary combustion turbine" under 40 CFR 63.6175.

7.2.3 MACT Subpart ZZZZ "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Applicability: This rule applies to all stationary reciprocating internal combustion engines (RICE). Each engine at this facility is subject to this rule. Note that certain types of engines, such as engine test stands, are not subject to this rule (see 40 CFR 63.6585). The rule has different requirements for engines based on the status of the facility (major or minor source of HAP), use of the engine (emergency, nonemergency, etc.), age of the engine, and size of the engine.

RICE with limited requirements: Under this rule, there are several categories of RICE that do not have to meet the requirements of the rule or of Subpart A (although in some cases, the RICE must submit an initial notification):

(1) A new or reconstructed emergency RICE with capacity greater than 500 horsepower at a major source of HAP (see 40 CFR 63.6590(b)(1)(i)).

(2) An existing emergency RICE with capacity greater than 500 horsepower at a major source of HAP (see 40 CFR 63.6590(b)(3)(iii)).

(3) A new or reconstructed emergency RICE with capacity less than 500 horsepower at a major source of HAP. Note that these engines demonstrate compliance with this rule by demonstrating compliance with NSPS Subpart IIII (see 40 CFR 63.6590(c)(6)).

Ultimately, the only RICE at this with substantial requirements under this rule are existing emergency RICE with capacity less than 500 horsepower.

Insignificant activities: Note that the only RICE with substantial requirements are an insignificant activity included in the group IES-EMGEN-EX. Insignificant activities are not referenced in the body of the Title V permit, but those sources must still comply with applicable rules, such as MACT Subpart ZZZZ.

Changes to the existing permit: The generator ES-17PSG does not have peak shaving capabilities (see application .20A, page 3-1). References to non-emergency use for this generator will be removed from the permit. This generator will now be grouped with the other new emergency-use generators with capacity greater than 500 horsepower.

7.2.4 MACT Subpart DDDDD "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters"

Applicability: This rule applies to boilers and process heaters (defined by 40 CFR 63.7575) located at major sources of HAP. There are many boilers at this facility subject to this rule.

Hot water heaters: The rule specifically exempts "hot water heaters" (defined by 40 CFR 63.7575) (see 40 CFR 63.7491(d)). Given the small size of hot water heaters, all such sources at this facility are insignificant activities. The permit groups the hot water heaters not subject to this rule under ID Nos. IES-00B-NG-WH, IES-00B-O-WH, and IES-00B-P-WH

Waste heat boilers: A "waste heat boiler" is specifically excluded from the definition of "boiler" (see 40 CFR 63.7575). The rule defines a waste heat boiler as:

> *Waste heat boiler* means a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators [HRSG]. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas.

The boiler ES-34B is a HRSG associated with the emergency-use turbine ES-33B. Because ES-34B is a HRSG, it is a waste heat boiler and therefore not a boiler under the definition of this rule.

Subcategories: For each boiler, the requirements of this rule are based on the specific subcategory of boiler. Each boiler (except for the oil-fired boilers (ID Nos. ES-943B, ES-944B, and ES-945B) at this facility is in the "Units designed to burn gas 1 fuels" subcategory (a.k.a. "gas 1 boilers," see 40 CFR 63.7499(l)). The rule defines this subcategory:

> *Unit designed to burn gas 1 subcategory* includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.

Note that although most of the boilers at this facility can burn oil, gas 1 boilers are allowed to burn oil during certain periods (such as maintenance or gas curtailment).

The oil-fired boilers (ID Nos. ES-943B, ES-944B, and ES-945B) can only fire No. 2 fuel oil, and are therefore in the "Units designed to burn light liquid" subcategory (a.k.a. "light liquid boilers," see 40 CFR 63.7499(u)). The rule specifically defines a "light liquid" as distillate oil, which includes No. 2 fuel oil.

Requirements: For light liquid boilers with capacity less than 10 MMBtu/hr and all gas 1 boilers (i.e., each boiler at this facility), the rule requires:

- Operate with good work practices [40 CFR 63.7500(a)(3)],
- Conduct initial and regular tune-ups [40 CFR 63.7540(a)(10)-(13)]
  - Every five years for boilers with capacity less than 5 MMBtu/hr
  - Every other year for boilers with capacity between 5 and 10 MMBtu/hr
  - Every year for boilers with capacity greater than 10 MMBtu/hr

- For existing boilers, conduct an initial, one-time energy assessment. [40 CFR 63.7500(a)(1), Table 3]

Monitoring, recordkeeping, and reporting: The facility must keep records of the tune-ups and other maintenance activities and submit regular reports. The rule normally requires a notification of compliance status to be submitted within 15 days of startup of a boiler. However, Fort Liberty has previously applied for a variance from this requirement as allowed by 40 CFR 63.9(i); instead, Fort Liberty is allowed to submit these notifications with the semiannual compliance report.[19]

Compliance: During DAQ's most recent inspection, Fort Liberty appeared to be in compliance with this rule. Continued compliance will be determined during subsequent inspections and reports.

Changes to the existing permit:

- The specific conditions for MACT Subpart DDDDD will be rewritten to match the format of DAQ's other Title V permits. Formatting changes are only for clarity and are not intended to affect Fort Liberty's compliance requirements.

- The new permit will include only one specific condition or MACT Subpart DDDDD. Due to the broad similarity of the requirements for the boilers, all boilers will be consolidated into this single condition.

- The existing permit includes some references to boiler ES-34B and requirements under this rule. As discussed above, ES-34B is a waste heat boiler and therefore not subject to this rule. References to this rule as it applies to ES-34B will be removed from the permit.

7.2.5 MACT Subpart PPPPP "National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands"

Applicability: This rule applies to engine test cells (a.k.a. engine test stands), as defined in the rule, that are located at a major source of HAP. There are four engine test stands at this facility: ES-01E, ES-02E, IES-03E, and IES-04E.

Test stands: In addition to the above-mentioned test stands, Fort Liberty also operates three "outboard engine test stands" (IES-05E, ES-07E, and IES-08E). According to Fort Liberty, these outboard engine test stands do not meet the definition of test stand under this rule:

> [IES-05E, ES-07E, and IES-08E] are not affected sources because they are tested in a manner such that the engine remains coupled to their lower unit gear drive and propeller without modification to their vessel-installed configuration. At Fort Liberty, outboard boat engines are not removed from their drive shaft and propeller prior to testing.[20]

This rule defines a test stand in 40 CFR 63.9375: "*Engine Test Cell/Stand* means any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) engines." Based on this definition, a test stand that leaves the engine partially installed is not a test stand for the purposes of this rule. Therefore, this rule does not apply to IES-05E, ES-07E, and IES-08E.

[19] See the letter from Steven Vozzo (Regional Air Quality Supervisor, DAQ) to Gregory Bean (Director of Public Works, Fort Bragg) dated July 10, 2012.
[20] Email from Michael R. Fischer (Air Quality Program Manager, DPW – Environmental Compliance Branch) received July 17, 2023.

Requirements: Each of these test stands is considered an "existing affected source" because they were constructed before May 14, 2002 and have not been reconstructed since that date (see 40 CFR 63.9290(a)(1)).[21] Existing affected sources do not have to meet the requirements of MACT Subpart PPPPP (see 40 CFR 63.9290(b)).

Compliance: Fort Liberty appears to be in compliance with this rule.

Changes to the existing permit: The existing Title V permit does not include any reference to this rule. Although the test stands do not have to meet the requirements of this rule, they are still considered subject to the rule because they meet the applicability requirement in 40 CFR 63.9285. Therefore, the permit will be updated to show that these sources are subject to this rule, but have no requirements under the rule.

7.3 Prevention of Significant Deterioration (PSD)

Background: Fort Liberty has previously been designated as a major source for PSD.[22] However, there are no PSD-affected sources at Fort Liberty at this time.

Existing PSD avoidance: In general, any modification at a PSD major source is a major modification if the increase in emissions from that modification are equal to or greater than the "significant" threshold in 40 CFR 51.166(b)(23)(i). Fort Liberty has previously made several modifications that avoided being classified as significant because Fort Liberty accepted emission limits under 15A NCAC 02Q .0317 for those modifications. See Section 6.8 for a discussion of Fort Liberty's existing requirements to avoid PSD applicability.

PSD applicability and new emission sources: Fort Liberty is adding several new emission sources as part of applications .20A, .21A, and .22A. The combined potential emissions from the proposed emission sources are greater than the significance threshold, so either PSD or PSD avoidance may potentially apply to the new proposed emission sources. However, as stated in each application, none of the proposed emission sources are substantially related[23] to each other, and therefore none of the proposed emission sources should be combined for PSD applicability.

Aggregation of substantially related projects: If a facility makes two or more modifications in a relatively short span of time, those projects should be aggregated together when determining PSD applicability if they are substantially related. As a general rule, projects that are not substantially related should be considered separately when determining applicability of PSD/NSR (i.e., not aggregated). In order to determine if two or more projects are substantially related, EPA has suggested looking at the different factors regarding the specific project, such as the timing of activities, technical dependence, and economic dependence.[24]

[21] The diesel engine test stands were installed in 1995, and the jet engine test stands were installed in 1997. See DAQ's application review for the T25 permit revision (issued April 13, 2006), page 13.
[22] See DAQ's application review the T20 permit revision (issued January 19, 2000), page 55.
[23] "Substantially related" is a determination initially suggested by EPA in a memo titled "Applicability of New Source Review Circumvention Guidance to 3M—Maplewood, Minnesota" (a.k.a. "3M memo"). EPA initially used the term "intrinsic relationship," but later stated the two terms are synonymous (see 83 FR 57331).
[24] See *Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR): Aggregation; Reconsideration* (83 FR 57324).

EPA has clarified that simply because two projects occur near to each other, they are not necessarily substantially related:

> "Activities occurring in unrelated portions of a major stationary source (e.g., a plant that makes two separate products and has no equipment shared among the two processing lines) [may] not be substantially related…to be 'substantially related,' there should be an apparent interconnection—either technically or economically—between the physical and/or operational changes…" (74 FR 2378).

EPA has further stated that that simply because two projects occur near in time to each other, they are not necessarily substantially related:

> "Such an approach—i.e. to aggregate projects simply because they may occur close in time or may support the same overall purpose of the facility—fails to take proper account of the actual interrelationship of activities" (83 FR 57330).

According to each application submitted by Fort Liberty, each of the proposed new emission sources (discussed in Section 1.0, above) are funded separately and will operate independently. As an example:

> "Separate funding codes, in relation to federally-funded projects, allow for disaggregation of project emissions for PSD purposes. In other words, because individual projects are appropriated separately by Congress, the emissions are calculated separately for each funding code and evaluated independently against PSD major modification thresholds. For simplification of this application, emissions associated with each project are summed for PSD determination purposes using the following approach." (application .21A at page 4-1)

Based on the above information, each individual proposed emission source can be considered separately for PSD applicability.

Significant emission increase: A significant emission increase (SEI) occurs if a modification causes an increase in emissions greater than the thresholds in 40 CFR 51.166(b)(23). Fort Liberty is adding several boilers and engines. As discussed above, each of these sources should be compared individually to the SEI threshold. For both boilers and generators, the worst-case pollutant is NOx, for which the SEI is 40 tpy.

- Diesel-fired emergency-use engines*:* Using the NOx emission factor from AP-42 Table 3.3-1 for diesel fuel engines,[25] an emergency-use engine with capacity less than 6,667 horsepower will not have potential emissions of NOx greater than 40 tpy:

$$\left[\left(0.024\frac{\text{lb}_{\text{NOx}}}{\text{hp-hr}}\right)\times(\mathbf{6,667\ hp})\times\left(500\frac{\text{hr}}{\text{yr}}\right)\right]/\left(2{,}000\frac{\text{lb}}{\text{ton}}\right)=\frac{40\ \text{ton}_{\text{NOx}}}{\text{yr}}$$

- Oil-fired boilers and water heaters*:* Using the NOx[26] emission factor from AP-42 Table 1.3-1 for distillate oil fired boilers with capacity less than 100 MMBtu/hr, an oil-fired boiler with capacity less than 127.85 MMBtu/hr will not have potential emissions of NOx greater than 40 tpy:

[25] The AP-42 factor engines is extremely conservative; the NOx limit under NSPS Subpart IIII is far lower. Therefore, this represents an upper bound.
[26] The oil-fired NOx emission factor is the worst-case scenario for all boilers capable of firing fuel oil at this facility.

$$\frac{\left(20\,\frac{\mathrm{lb_{NOx}}}{10^3\ \mathrm{gal}}\right)\times\left(\mathbf{127.85}\,\frac{\mathbf{MMBtu}}{\mathbf{hr}}\right)\times\left(8{,}760\,\frac{\mathrm{hr}}{\mathrm{yr}}\right)}{\left(140\,\frac{\mathrm{MMBtu}}{10^3\ \mathrm{gal}}\right)\times\left(2{,}000\,\frac{\mathrm{lb}}{\mathrm{ton}}\right)}=\frac{40\ \mathrm{ton_{NOx}}}{\mathrm{yr}}$$

None of the individual emission sources have capacities greater than the thresholds listed above. Therefore, none of the individual emission sources have potential emissions greater the significant threshold. Therefore, neither PSD nor PSD avoidance will apply to any of the emission sources proposed in applications .20A, .21A, or .22A.

7.4 Section 112(r) of the Clean Air Act (and 15A NCAC 02D .2100 "Risk Management Program")

This rule requires facilities that store materials above the threshold quantities in 40 CFR 68.130 above their respective thresholds to prepare and submit a risk management plan (RMP).

In each application on Form A3, Fort Liberty indicates that an RMP is not required for this facility. Therefore, Fort Liberty does not have any increased requirements under Section 112(r). Note that other parts of that rule, such as the General Duty clause, may still apply to this facility.

7.5 Compliance Assurance Monitoring (CAM; 40 CFR Part 64)

Applicability: The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Per 02D .0614(a), this rule potentially applies to any facility required to obtain a permit under 02Q .0500 (i.e., a Title V permit). This facility is required to obtain a permit under 02Q .0500. Therefore, CAM applicability must be examined.

Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following four conditions are met:

I. The unit is subject to any (non-exempt, e.g., pre-November 15, 1990, Section 111 or 112 standard) emission limitation or standard for the applicable regulated pollutant.
II. The unit uses any control device to achieve compliance with any such emission limitation or standard.
III. The unit's pre-control potential emission rate exceeds 100 percent of the amount required for a source to be classified as a major source, i.e., either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP.

Control Device	Associated Emission Sources	Triggers CAM?	Notes
Selective catalytic reduction	ES-87G, ES-191GI, ES-192GI	No	1
Fabric filters	ES-01PC, ES-01P	No	2
	ES-01C, ES-02C, ES-08C, ES-09C, ES-12C	No	3

Control Device	Associated Emission Sources	Triggers CAM?	Notes
Thermal oxidizer	ES-10C		

Notes:

1. These units do not have pre-control emissions greater than a major source threshold. In order for an emergency-use generator to have 100 tpy, the emergency generator must have a capacity of at least:[27]

$$\left[\left(0.024\frac{\text{lb}}{\text{hp-hr}}\right)\left(500\frac{\text{hr}}{\text{yr}}\right)(\mathbf{16,667\ hp})\right]/\left(2{,}000\frac{\text{lb}}{\text{ton}}\right)=100\frac{\text{ton}}{\text{yr}}$$

   Each emergency generator at this facility has a capacity less than the threshold. Therefore, no emergency generator at this facility will trigger CAM applicability.

2. The fabric filters for these units do not meet the definition of control device for CAM. See DAQ's review of the T43 permit revision (issued April 25, 2017), page 4.

3. This unit does not have pre-control emissions greater than a major source threshold. See DAQ's review of the T35 permit revision (issued October 27, 2011), page 28.

7.6 Federal Plan Requirements (40 CFR Part 62)

7.6.1 40 CFR Part 62, Subpart OOO "Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014"

Background: The Federal rules under 40 CFR Part 62 are not incorporated into North Carolina's SIP, but are still applicable to facilities. This rule potentially applies to landfills located in an area that has not implemented 40 CFR Part 60, Subpart Cf. North Carolina's SIP includes Section 02D .1700 "Municipal Solid Waste Landfills," but those SIP rules have not yet been updated and approved to implement Subpart Cf. Therefore, this rule is applicable to landfills in North Carolina.

Applicability: This rule applies to landfills constructed on or before July 17, 2014 and that have accepted waste since November 8, 1987 (see 40 CFR 62.16711(a)). According to correspondence with Fort Liberty staff, "Longstreet Landfill was closed in 1998. Landfill 9 closed in 1975. Landfill 14 closed in 1986…NSPS Subpart WWW only applies to the Longstreet Landfill. A study in 2003 determined the landfill size was 2.29 million cubic meters."[28] Therefore, the Longstreet Landfill (IES-01L) is subject to this rule, but Landfills 9 and 14 are not subject to this rule.

Requirements: The standards of this rule depend on the design capacity of the landfill. According to Fort Liberty, the Longstreet Landfill has previously been determined to be 2.29 million cubic meters. For landfills with a capacity less than 2.5 million cubic meters, a facility must submit a report showing the design capacity of the landfill, and a subsequent report whenever the design capacity changes. There are no

[27] Based on the emission factor for uncontrolled NOx listed in AP-42 Table 3.4-1.
[28] Email from Michael R. Fischer (Air Quality Program Manager, DPW – Environmental Compliance Branch) received March 21, 2023. Note that NSPS Subpart WWW no longer applies within North Carolina.

additional monitoring, recordkeeping, or reporting requirements under this rule for landfills with a capacity less than 2.5 million cubic meters (see 40 CFR 62.16714(d)).

Compliance: According to Fort Liberty, the landfill size has already been determined, and the landfill is no longer accepting new waste. Therefore, it appears that Fort Liberty is in compliance with this rule.

Changes to the existing permit: The existing permit does not include a reference to this rule. The only source at this facility that is subject to this rule is an insignificant activity. Rules that apply exclusively to insignificant activities are generally not included in the body of the Title V permit. A reference to this rule will be added to the list of insignificant activities.

8.0 North Carolina Toxic Air Pollutants

Applicability: The rules for toxic air pollutants under 15A NCAC 02D .1100 and 02Q .0700 apply to facilities that emit toxic air pollutants. In general, if a facility would emit a TAP at rates greater than the TAP permitting emission rates (TPER) listed in 02Q .0711, the facility must first conduct an air dispersion modeling demonstration under 15A NCAC 02D .1104 and .1106. Several types of sources are exempt from TAP requirements; exempt sources are listed in 02Q .0702.

Background: In 2010, DAQ issued a Schedule of Compliance to Fort Liberty which required the facility to complete a facility-wide TAP modeling demonstration.[29] Fort Liberty submitted the required modeling demonstration on January 3, 2012 (approved January 19, 2012). Instead of using actual or potential emission rates, the modeling demonstration "optimized" emission rates in order to reach 98% of the acceptable ambient limit (AAL) in 02D .1104. Emission rates were modeled on a continuous basis (24 hr/dy and 8,760 hr/yr). This is an extremely conservative approach because the emission rates modeled exceeded the potential emission rates of the individual sources, and sources that otherwise operate intermittently (such as emergency generators) were modeled as operating continuously.

The results of this modeling demonstration were not included in the permit because virtually all of the sources of TAP emissions at this facility are subject to a requirement under 40 CFR Part 63 and are therefore exempt from TAP requirements per 15A NCAC 02Q .0702(a)(27) and NCGS 143-215.107(a)(5).

The existing permit includes a table of TAPs and their respective TPERs under 02Q .0711. Many entries in this table are not needed because Fort Liberty has already modeled for these TAPs.

Modifications: Fort Liberty has applied to make several modifications to the list of permitted emission sources. The new sources are all subject to a rule under 40 CFR Part 63 (either Subpart ZZZZ for generators or Subpart DDDDD for boilers) and are therefore exempt from TAP requirements under 02Q .0702(a)(27). However, per 15A NCAC 02Q .0706(c), DAQ is required to review these sources pursuant to NCGS 143-215.107(a)(5)b to determine if this exemption poses an unacceptable risk to human health.

As discussed above, when Fort Liberty most recently modeled TAP emissions from this facility, the modeling approach was extremely conservative: as an example, the combined modeled emission rate was approximately **63.6 pounds per hour**. The facility-wide potential hourly emission rate of formaldehyde can be estimated by adding the formaldehyde emissions from the facility-wide boilers, generators, and turbine.[30]

[29] The Schedule of Compliance was first included in the Title V permit with the T33 revision, issued October 29, 2010.

[30] For gas and oil-fired boilers, natural gas is the worst-case emission factor for formaldehyde. Natural gas is the worst-case emission factor for formaldehyde from turbines. Diesel fuel is the worst case for the generators. Formaldehyde from other sources is expected to be minimal.

Source	Formaldehyde Emission Factor	Facility-wide Capacity (including applications)	Formaldehyde emisison rate
NG-fired Boilers	7.50E-02 lb/MMscf*	1,743 MMBtu/hr	0.13 lb/hr
Oil-fired Boilers	6.10E-02 lb/10^3 gal****	56.08 MMBtu/hr	0.02 lb/hr
Generators	7.89E-05 lb/MMBtu**	117,359 hp	0.06 lb/hr
Turbine	7.10E-04 lb/MMbtu***	61.32 MMBtu/hr	0.04 lb/hr
		Total:	**0.26 lb/hr**

Constants and Factors
1,020 Btu/scf
140 MMBtu/10^3 gal
7,000 Btu/hp-hr †

Notes
* AP-42 Table 1.4-3
** AP-42 Table 3.4-3
*** AP-42 Table 3.1-3
**** AP-42 Table 1.3-8
† Value taken from AP-42 Table 3.4-1, footnote e

In this case, the modeled formaldehyde emission rate is about 250 times greater than the facility's current potential formaldehyde emission rate, which demonstrates the wide margin of compliance in the facility's modeling demonstration versus the current facility (including the new emission sources included in applications .20A, .21A, and .22A).

Furthermore, the facility's overall potential emissions have decreased since the most recent modeling demonstration. The facility has a greater capacity of boiler input and generator output, but Fort Liberty no longer has any peak-shaving generators and the turbine ES-33B is now only for emergency-use. As a result, the facility's potential generator operation (as measured by horsepower-hours generated per year) has decreased dramatically, offsetting any increase in boiler capacity.

Based on the extremely conservative previous modeling performed by Fort Liberty and the changes in facility-wide capacity of boilers and generators, DAQ does not believe the existing facility or the proposed new emission sources pose an unacceptable risk to human health.

Changes to the existing permit:

- The existing permit includes a reference to TAP requirements for the turbine ES-33B. This turbine is subject to a MACT rule (40 CFR Part 63, Subpart YYYY) and therefore is exempt from these rules. This reference will be removed from the permit. Note that this turbine was included in the 2012 modeling demonstration.

- The existing permit includes a reference to 15A NCAC 02D .1100 under Section 2.1 M. The permit does not include a specific condition for 15A NCAC 02D .1100, so this reference will be removed from the permit.

- The existing permit includes a reference to a "toxics evaluation" per NCGS 143-215.107 for the welding operations ES-27W and ES-28W. Based on Fort Liberty's previous TAP modeling, this toxics

evaluation requirement has been completed. The welding operations can be moved to the list of insignificant activities, and this requirement can be removed from the permit.

- The existing permit includes a table of TPERs under 02Q .0711. This list includes several TAPs for which Fort Liberty has previously modeled. Therefore, the following pollutants will be removed from the TPER table: xylene, toluene, MIBK, and MEK.

9.0 Compliance Status and Other Regulatory Concerns

Compliance status: This facility was most recently inspected on March 28, 2023 by Taijah Hamil. Fort Liberty appeared to be in compliance with the Title V permit at that time.

Compliance history: The Title V permit was most recently renewed on April 25, 2017. Since that date, Fort Liberty has not been issued any Notices of Violation.

Application fee: Applications for significant modification require an application fee. An application fee was required for applications .20A, .21A, and .22A. Fort Liberty paid the appropriate fee for each application.

PE Seal: Pursuant to 15A NCAC 02Q .0112 "Application requiring a Professional Engineering Seal," a professional engineer's seal (PE Seal) is required to seal technical portions of air permit applications for new sources and modifications of existing sources as defined in 15A NCAC 02Q .0103. A PE seal was not required for any of the proposed modifications or Title V permit renewal.

Zoning: A Zoning Consistency Determination per 15A NCAC 02Q .0304(b) was not required for these modifications because they do not involve expansion of an existing facility.

10.0 Facility Emissions Review

Emission changes based on new and removed sources: Fort Liberty applied for the addition and removal of several emission sources as part of applications .20A, .21A, and .22A. In each of those applications, Fort Liberty calculated the change in facility-wide emissions. The summary of those calculations are included as Attachment 1.

Title V: Fort Liberty is a major source for Title V because it has potential emissions of criteria pollutants greater than the major source threshold (100 tpy). The proposed modifications and Title V permit renewal will not affect Fort Liberty's status as a major source for Title V.

HAP: Fort Liberty is a major source of hazardous air pollutants (HAP) because it has potential emissions of HAP greater than the major source threshold (10 tpy individually, 25 tpy total). The proposed modifications and Title V permit renewal will not affect Fort Liberty's status as a major source of HAP.

PSD: Fort Liberty has previously been designated a major source for PSD, although Fort Liberty currently has no specific requirements for PSD, and is avoiding triggering a major modification for PSD by complying with avoidance limits under 02Q .0317. The proposed modifications and Title V permit renewal will not affect Fort Liberty's status as a major source for PSD, and will not trigger a major modification for PSD.

PSD Increment Tracking: Cumberland County has triggered PSD increment tracking for PM10 and SO_2. Based on the addition and removal of emission sources discussed in Section 1, the change in potential hourly emission rates of PM10 and SO_2 can be calculated. Note that potential emissions of emergency

engines are based on 500 hours of operation per year. For the purpose of increment tracking, this will be averaged out over an entire year.

Generator capacity and operating changes	
1,588	hp of added emergency-use engines with capacity less than 600 hp
793,950	hp-hr potential engine operation
26,733	hp of added emergency-use engines with capacity greater than 600 hp
13,366,500	hp-hr potential engine operation
1,005	hp of removed emergency-use engines with capacity less than 600 hp
502,500	hp-hr potential engine operation
3,618	hp of added emergency-use engines with capacity greater than 600 hp
1,809,000	hp-hr potential engine operation
3,618	hp of removed non-emergency-use engines with capacity greater than 600 hp
31,693,680	hp-hr potential engine operation

Boiler capacity changes	
57	MMBtu/hr total added boiler capacity
4	MMBtu/hr total removed boiler capacity

Net generator operation change		
Capacity less than 600 hp:	291,450	hp-hr/yr
Capacity greater than 600 hp:	-20,136,180	hp-hr/yr

Net boiler capacity change	
53	MMBtu/hr

Net change in hourly emission rates due to generators (lb/hr)
SO_2: 0.04
PM: -1.59

Net change in hourly emission rates due to boilers (lb/hr)
SO_2: 0.03
PM: 0.39

Constants and Factors	
1.34	hp/kW
15	ppm sulfur content of diesel fuel
1.21E-05	lb_{SO2}/hp-hr, engine capacity greater than 600 hp (AP-42 Table 3.4-1)
7.00E-04	lb_{PM}/hp-hr, engine capacity greater than 600
2.05E-03	lb_{SO2}/hp-hr, engine capacity less than 600 hp (AP-42 Table 3.3-1)
7.21E-04	lb_{PM}/hp-hr, engine capacity less than 600 hp

Constants and Factors	
1,020	Btu/scf
7.6	$lb_{PM}/10^6$scf (AP-42 Table 1.4-2)
0.6	$lb_{SO2}/10^6$scf

PSD Increment Tracking Net Change (lb/hr)	
SO_2	+0.07
PM	-1.20

11.0 Draft Permit Review Summary

Initial draft: An initial draft of the Title V permit and this application review were sent to DAQ Permits staff on June 21, 2023.

- Permits Comment 1: Pointed out typos in the draft permit and application review.

  Response: The indicated issues were corrected.

- Permits Comment 2: The permit should be more consistent with requiring reporting of deviations and the inclusion of noncompliance statements.

  Response: These were added to the draft where they were missing.

- Permits Comment 3: The application review should include the calculated emission changes for each application.

  Response: A copy of the emission calculations performed by Fort Liberty was attached to the application review.

- Permits Comment 4: The application review should specifically mention the "aggregation rule" when discussing the potential need to aggregate projects for PSD applicability.

  Response: A reference to the Federal Register where the aggregation rule is discussed was added to the application review.

Second draft: The revised draft Title V permit and this application review were sent to DAQ SSCB staff, DAQ FRO staff, and Fort Liberty staff on July 6, 2023.

- Fort Liberty Comment 1: Mailing address and Responsible Official have been updated.

  Response: The permit will be updated with this new information.

- Fort Liberty Comment 2: Requests to administratively remove ES-942B, No. 2 fuel oil-fired boiler (5.5 million Btu per hour heat input), from the permit.

  Response: This source will be removed from the permit.

- Fort Liberty Comment 3: Summary of Changes section includes duplicate entries for generators and fire pumps moved to the list of insignificant activities.

  Response: This issue was corrected.

- Fort Liberty Comment 4: Proposed generator ES-105G was omitted from the permit.

  Response: This issue was corrected.

- Fort Liberty Comment 5: Cross reference error in Section 2.1 B.3.d.ii.

  Response: This issue was corrected.

- Fort Liberty Comment 6: ES-922B is listed twice on page 15.

  Response: This issue was corrected.

- Fort Liberty Comment 7: Conditions 2.1 G.2.c and 2.1 H.2.c mention "daily" VE observations. This should be monthly.

  Response: This issue was corrected.

- Fort Liberty Comment 8: Section 2.1 I should be "Materi**e**l" not "Material."

  Response: This issue was corrected.

- Fort Liberty Comment 9: In Section 2.2 A, the ID No. of "ES-FORSCOM1" is missing the "ES-"

  Response: This issue was corrected.

- Fort Liberty Comment 10: For the turbine and heat recovery steam generator (HRSG) group in Section 2.2 A, the HRSG is referred to as a natural gas-fired boiler. Fort Liberty accepts this nomenclature as long as there is no regulatory implications or repercussions.

  Response: This was a typo. The permit will refer to ES-34B as a heat recovery steam generator.

- Fort Liberty Comment 11: Permit Page 53: 2.2.A.14.c. $EF_{turb,oil}$. The initial performance test of the turbine resulted in a fuel oil NOx emission factor of 16.14 lbs NOx/hr. This was written into the existing permit (T46).

  Response: The draft permit had the wrong EF for the turbine. The permit will include the correct EF.

- Fort Liberty Comment 12: Permit Page 55: 2.2.B.1.f.ii AND pg 57: 2.2.B.1.j.i. Fort Liberty petitioned the EPA for an alternative reporting schedule on April 23, 2012. In short, we cannot possibly report 15 days after the start-up of MACT boiler. We were granted a reporting variance on July 10, 2012 for the Initial Notification and semi-annual reports. Fort Liberty requests the final permit recognize this variance such as the existing permit does through condition 2.2.M.1.h.

  Response: Paragraph 2.2 B.1.f.ii will be updated to reflect this variance. The application review will be updated to specifically mention that this request was approved by DAQ in 2012.

  In Fort Liberty's request and DAQ's approval letter, reference was made to semiannual reporting requirements in MACT Subpart DDDDD. This

semiannual report is no longer required by MACT Subpart DDDDD for the boilers present at this facility. See 40 CFR 63.7550(b):

> 40 CFR 63.7550(b) …For units that are subject only to a requirement to conduct subsequent annual, biennial, or 5-year tune-up…and not subject to emission limits or Table 4 operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.

The draft permit requires, at a minimum, an annual report instead of a semiannual report.

The existing permit requires semiannual reporting for the initial notifications. In the draft permit, paragraph 2.2 B.1.j.i requires reporting on an annual basis, which is less stringent.

Fort Liberty later agreed that paragraph 2.2 B.1.j.i should not be changed.

- Fort Liberty Comment 13: Insignificant Activities List: IES-00B-NG. Fort Liberty seeks to revise the IES-00B-NG group as follows:

(A) ES-36B, ES-37, ES-38B, ES-39B, ES-40B, ES-41B, ES-42B, and ES-43B were originally included in the totals for IES-00B-NG. Because they are subject to PSD Avoidance, they must be excluded from the proposed insignificant grouping. (8 Boilers with total capacity of 73,880,000 Btu/hr)

(B) Fort Liberty initially included IES-938B, IES-939B, IES-940B, and IES-941B in IES-00B-NG. Because these units are not subject to the Boiler MACT, they do not belong in IES-00B-NG. (4 Air make-up Heaters with a total capacity of 28,000,000 Btu/hr)

(C) Fort Liberty initially included the Tank Purger natural gas-fired water heater in the IES-00B-NG totals. This heater is already identified as an insignificant emission source. (1 Heater with a total capacity of 5,000,000 Btu/hr)

TOTALS: IES-00B-NG (109 boilers, 372.51 MMBtu/hr)

Revisions: Remove 13 boilers from the initial group with a total capacity of 106.88 MMBtu/hr

Response: The source IES-00B-NG will be updated to the following: 96 natural gas-fired boilers, each with heat input capacity less than 11.6 million Btu per hour and subject to MACT Subpart DDDDD (265.63 million Btu per hour total heat input capacity)

12.0 Public Notice and EPA Review

A notice of the draft Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0518(b), the EPA will have a 45-day review period. Based on an agreement between DAQ and EPA, this period will generally coincide with the 30-day public notice period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the draft Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. DAQ voluntarily provides notice to each bordering State (Virginia, Tennessee, Georgia, and South Carolina).

- The Public Notice and EPA Review periods began on XXXX
- The Public Notice period ended on XXXX
- The EPA Review period ended on XXXX

13.0 Recommendations

This permit application has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements.

DAQ recommends issuance of Permit No. 04379T47. FRO, SSCB, and Fort Liberty have received a copy of this permit and submitted comments that were incorporated as described in Section 11.0.

Attachment 1 to Review of applications 2600102.20A, .21A, & .22A
HQ XVIII ABN Corps & Fort Liberty
Application emission calculations

The following summary tables were prepared by Fort Liberty and included in applications .20A, .21A, and .22A, respectively.

Application .20A

(see Appendix B to application .20A, page 3)

Emissions Summary of Proposed Permit Additions

CAS #	Compound	TAP	HAP	PAH	POM	Total Emissions ton/yr	[B3] BLR NG ton/yr	[B6] ICE SM ton/yr	[B8] ICE Dual LG ton/yr	[B9] ICE Diesel LG ton/yr	[B10] PT Heater ton/yr
Greenhouse Gas Pollutants											
CO_2	CARBON DIOXIDE					11,622.80	10,656.99	281.25	139.96	1,530.60	(985.99)
CH_4	METHANE					0.171	0.201	0.011	0.003	0.06	(0.11)
N_2O	NITROUS OXIDE					0.010	0.020	0.002	0.000	0.01	(0.03)
Criteria Pollutants											
CO	CARBON MONOXIDE					17.03	7.46	1.65	0.92	7.38	(0.37)
NO_x	NITROGEN OXIDE					46.01	4.44	7.64	4.02	32.18	(2.27)
PM	PARTICULATE MATTER					1.91	0.67	0.54	0.08	0.65	(0.039)
PM_{10}	PARTICULATE MATTER (LESS THAN 10μ)					1.78	0.67	0.54	0.07	0.54	(0.039)
$PM_{2.5}$	PARTICULATE MATTER (LESS THAN 2.5μ)					1.77	0.67	0.54	0.07	0.52	(0.039)
SO_2	SULFUR DIOXIDE					0.59	0.05	0.51	0.00	0.02	0.01
VOC	VOLATILE ORGANIC COMPOUNDS					2.02	0.49	0.62	0.12	0.95	(0.15)
Organic Compounds		TAP	HAP	PAH	POM	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
106-99-0	1,3-BUTADIENE	Y	Y			1.35E-01	-	1.35E-01	-	-	-
75-07-0	ACETALDEHYDE	Y	Y			3.18E+00	-	2.65E+00	0.06	0.47	-
107-02-8	ACROLEIN	Y	Y			4.86E-01	-	3.19E-01	0.02	0.15	-
71-43-2	BENZENE	Y	Y			2.00E+01	3.73E-01	3.22E+00	1.82	14.57	-1.79E-02
106-46-7	DICHLOROBENZENE		Y			2.03E-01	2.13E-01	0.00E+00	-	-	-1.02E-02
100-41-4	ETHYL BENZENE		Y			0.00E+00	-	0.00E+00	-	-	-
50-00-0	FORMALDEHYDE	Y	Y			1.84E+01	1.33E+01	4.07E+00	0.19	1.48	-6.40E-01
110-54-3	HEXANE	Y	Y			3.04E+02	3.20E+02	-	-	-	-1.54E+01
1634-04-4	METHYL TERT BUTYL ETHER		Y			0.00E+00	-	-	-	-	-
95-47-6	O-XYLENE		Y			0.00E+00	-	-	-	-	-
123-38-6	PROPIONALDEHYDE		Y			0.00E+00	-	-	-	-	-
100-42-5	STYRENE	Y	Y			0.00E+00	-	-	-	-	-
108-88-3	TOLUENE	Y	Y			7.92E+00	6.04E-01	1.41E+00	0.66	5.28	-2.90E-02
71-55-6	TRICHLOROETHANE, 1,1,1-	Y	Y			0.00E+00	-	-	-	-	-
1330-20-7	XYLENE	Y	Y			5.06E+00	-	9.83E-01	0.45	3.62	-
Metals		TAP	HAP	PAH	POM	lb/yr	lb/yr	lb/yr	lb/yr		lb/yr
ASC	ARSENIC	Y	Y			1.32E-01	3.55E-02	1.38E-02	9.39E-03	7.51E-02	-1.71E-03
BEC	BERYLLIUM	Y	Y			7.57E-02	2.13E-03	1.03E-02	7.04E-03	5.63E-02	-1.02E-04
7440-43-9	CADMIUM	Y	Y			2.60E-01	1.95E-01	1.03E-02	7.04E-03	5.63E-02	-9.39E-03
CRC	CHROMIUM (TOTAL)		Y			3.10E-01	2.49E-01	1.03E-02	7.04E-03	5.63E-02	-1.20E-02
COC	COBALT		Y			1.42E-02	1.49E-02	-	0.00E+00	0.00E+00	-7.17E-04
PBC	LEAD		Y			3.06E-01	8.88E-02	3.10E-02	2.11E-02	1.69E-01	-4.27E-03
MNC	MANGANESE	Y	Y			2.12E-01	6.75E-02	2.07E-02	1.41E-02	1.13E-01	-3.24E-03
HGC	MERCURY & COMPOUNDS	Y	Y			1.18E-01	4.62E-02	1.03E-02	7.04E-03	5.63E-02	-2.22E-03
7440-02-0	NICKEL	Y	Y			4.29E-01	3.73E-01	1.03E-02	7.04E-03	5.63E-02	-1.79E-02
SEC	SELENIUM		Y			3.73E-01	4.26E-03	5.17E-02	3.52E-02	2.82E-01	-2.05E-04
Polycyclic Aromatic Hydrocarbons (PAH) & Polycyclic Organic Matter (POM)		TAP	HAP	PAH	POM	lb/yr	lb/yr	lb/yr	lb/yr		lb/yr
83-32-9	ACENAPHTHENE		Y		Y	1.04E-01	3.20E-04	4.90E-03	1.10E-02	8.79E-02	-1.54E-05
208-96-8	ACENAPHTHYLENE		Y		Y	2.13E-01	3.20E-04	1.75E-02	2.17E-02	1.73E-01	-1.54E-05
120-12-7	ANTHRACENE		Y		Y	3.28E-02	4.26E-04	6.45E-03	2.89E-03	2.31E-02	-2.05E-05
56-55-3	BENZO(A)ANTHRACENE		Y	Y	Y	1.92E-02	3.20E-04	5.80E-03	1.46E-03	1.17E-02	-1.54E-05
218-01-9	BENZO(A)PHENANTHRENE (CHRYSENE)		Y	Y	Y	3.38E-02	3.20E-04	1.22E-03	3.59E-03	2.87E-02	-1.54E-05
50-32-8	BENZO(A)PYRENE	Y	Y	Y	Y	6.28E-03	2.13E-04	6.49E-04	6.03E-04	4.82E-03	-1.02E-05
205-99-2	BENZO(B)FLUORANTHENE		Y	Y	Y	2.41E-02	3.20E-04	3.42E-04	2.60E-03	2.08E-02	-1.54E-05
191-24-2	BENZO(G,H,I)PERYLENE		Y		Y	1.36E-02	2.13E-04	1.69E-03	1.30E-03	1.04E-02	-1.02E-05
206-44-0	BENZO(J,K)FLUORENE (FLUORANTHENE)		Y		Y	1.12E-01	5.33E-04	2.63E-02	9.46E-03	7.57E-02	-2.56E-05
207-08-9	BENZO(K)FLUORANTHENE		Y	Y	Y	5.44E-03	3.20E-04	5.35E-04	5.12E-04	4.09E-03	-1.54E-05
53-70-3	DIBENZO(A,H)ANTHRACENE		Y	Y	Y	9.52E-03	2.13E-04	2.01E-03	8.12E-04	6.50E-03	-1.02E-05
86-73-7	FLUORENE		Y		Y	3.72E-01	4.97E-04	1.01E-01	3.00E-02	2.40E-01	-2.39E-05
193-39-5	INDENO(1,2,3-CD)PYRENE		Y	Y	Y	1.03E-02	3.20E-04	1.29E-03	9.72E-04	7.77E-03	-1.54E-05
56-49-5	3-METHYLCHLORANTHRENE		Y		Y	3.04E-04	3.20E-04	-	0.00E+00	-	-1.54E-05
91-57-6	2-METHYLNAPTHALENE		Y		Y	4.06E-03	4.26E-03	-	0.00E+00	-	-2.05E-04
91-20-3	NAPHTHALENE		Y		Y	3.14E+00	1.08E-01	2.93E-01	3.05E-01	2.44E+00	-5.21E-03
85-01-8	PHENANTHRENE		Y		Y	9.66E-01	3.02E-03	1.01E-01	9.57E-02	7.66E-01	-1.45E-04
POM	POLYCYCLIC ORGANIC MATTER (POM)		Y		Y	1.15E-01	1.21E-01	-	0.00E+00	-	-5.82E-03
129-00-0	PYRENE		Y		Y	9.57E-02	8.88E-04	1.65E-02	8.71E-03	6.97E-02	-4.27E-05

Application .21A

(see Appendix B to application .21A, page 3)

Emissions Summary of Proposed Permit Additions

CAS #	Compound	TAP	HAP	PAH	POM	Total Emissions ton/yr	[B4] BLR NG ton/yr	[B5] BLR NG REM ton/yr	[B8] ICE Diesel SM ton/yr	[B9] ICE NG SM ton/yr
Greenhouse Gas Pollutants										
CO_2	CARBON DIOXIDE					12,857.17	13,761.86	-1537.07	143.49	488.88
CH_4	METHANE					0.245	0.259	-0.03	0.01	0.01
N_2O	NITROUS OXIDE					0.025	0.026	-0.003	0.001	0.001
Criteria Pollutants										
CO	CARBON MONOXIDE					11.34	9.63	-1.08	0.84	1.942
NO_x	NITROGEN OXIDE					9.96	5.73	-0.64	3.90	0.971
PM	PARTICULATE MATTER					1.13	0.87	-0.10	0.28	0.081
PM_{10}	PARTICULATE MATTER (LESS THAN 10μ)					1.13	0.87	-0.10	0.28	0.081
$PM_{2.5}$	PARTICULATE MATTER (LESS THAN 2.5μ)					1.13	0.87	-0.10	0.26	0.081
SO_2	SULFUR DIOXIDE					0.32	0.07	-0.01	0.26	0.002
VOC	VOLATILE ORGANIC COMPOUNDS					1.56	0.63	-0.07	0.32	0.680
Organic Compounds		***TAP***	***HAP***	***PAH***	***POM***	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
75-07-0	ACETALDEHYDE	Y	Y			2.47E+01	-	-	1.35E+00	2.33E+01
107-02-8	ACROLEIN	Y	Y			2.21E+01	-	-	1.63E-01	2.20E+01
71-43-2	BENZENE	Y	Y			1.53E+01	4.82E-01	-5.36E-02	1.64E+00	1.32E+01
106-99-0	BUTADIENE, 1,3-	Y	Y			5.61E+00	-	-	6.88E-02	5.54E+00
56-23-5	CARBON TETRACHLORIDE	Y	Y			1.48E-01	-	-	-	1.48E-01
108-90-7	CHLOROBENZENE	Y	Y			1.08E-01	-	-	-	1.08E-01
67-66-3	CHLOROFORM	Y	Y			1.15E-01	-	-	-	1.15E-01
106-46-7	DICHLOROBENZENE		Y			2.44E-01	2.75E-01	-3.07E-02	-	-
75-34-3	DICHLOROETHANE, 1,1-		Y			9.45E-02	-	-	-	9.45E-02
75-09-2	DICHLOROMETHANE	Y	Y			3.44E-01	-	-	-	3.44E-01
78-87-5	DICHLOROPROPANE, 1,2-		Y			1.09E-01	-	-	-	1.09E-01
542-75-6	DICHLOROPROPENE, 1,3-		Y			1.06E-01	-	-	-	1.06E-01
100-41-4	ETHYL BENZENE		Y			2.07E-01	-	-	-	2.07E-01
106-93-4	ETHYLENE DIBROMIDE	Y	Y			1.78E-01	-	-	-	1.78E-01
107-06-2	ETHYLENE DICHLORIDE	Y	Y			9.45E-02	-	-	-	9.45E-02
50-00-0	FORMALDEHYDE	Y	Y			1.89E+02	1.72E+01	-1.92E+00	2.08E+00	1.71E+02
110-54-3	HEXANE	Y	Y			3.67E+02	4.13E+02	-4.61E+01	-	-
67-56-1	METHANOL		Y			2.56E+01	-	-	-	2.56E+01
95-47-6	O-XYLENE		Y			0.00E+00	-	-	-	-
100-42-5	STYRENE	Y	Y			9.95E-02	-	-	-	9.95E-02
79-34-5	TETRACHLOROETHANE, 1,1,2,2-	Y	Y			2.11E-01	-	-	-	2.11E-01
108-88-3	TOLUENE	Y	Y			6.08E+00	7.80E-01	-8.71E-02	7.20E-01	4.66E+00
71-55-6	TRICHLOROETHANE, 1,1,1-	Y	Y			0.00E+00	-	-	-	-
79-00-5	TRICHLOROETHANE, 1,1,2-		Y			1.28E-01	-	-	-	1.28E-01
75-01-4	VINYL CHLORIDE	Y	Y			6.00E-02	-	-	-	6.00E-02
1330-20-7	XYLENE	Y	Y			2.13E+00	-	-	5.02E-01	1.63E+00
Metals		***TAP***	***HAP***	***PAH***	***POM***	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
ASC	ARSENIC	Y	Y			4.07E-02	4.59E-02	-5.12E-03	-	-
BEC	BERYLLIUM	Y	Y			2.44E-03	2.75E-03	-3.07E-04	-	-
7440-43-9	CADMIUM	Y	Y			2.24E-01	2.52E-01	-2.82E-02	-	-
CRC	CHROMIUM (TOTAL)		Y			2.85E-01	3.21E-01	-3.59E-02	-	-
COC	COBALT		Y			1.71E-02	1.93E-02	-2.15E-03	-	-
PBC	LEAD		Y			1.02E-01	1.15E-01	-1.28E-02	-	-
MNC	MANGANESE	Y	Y			7.74E-02	8.71E-02	-9.73E-03	-	-
HGC	MERCURY & COMPOUNDS	Y	Y			5.30E-02	5.96E-02	-6.66E-03	-	-
7440-02-0	NICKEL	Y	Y			4.28E-01	4.82E-01	-5.38E-02	-	-
SEC	SELENIUM		Y			4.89E-03	5.50E-03	-6.15E-04	-	-
Polycyclic Aromatic Hydrocarbons (PAH) & Polycyclic Organic Matter (POM)		***TAP***	***HAP***	***PAH***	***POM***	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
83-32-9	ACENAPHTHENE		Y		Y	2.87E-03	4.13E-04	-4.61E-05	2.50E-03	-
208-96-8	ACENAPHTHYLENE		Y		Y	9.27E-03	4.13E-04	-4.61E-05	8.91E-03	-
120-12-7	ANTHRACENE		Y		Y	3.78E-03	5.50E-04	-6.15E-05	3.29E-03	-
56-55-3	BENZO(A)ANTHRACENE		Y	Y	Y	3.32E-03	4.13E-04	-4.61E-05	2.96E-03	-
218-01-9	BENZO(A)PHENANTHRENE (CHRYSENE)		Y	Y	Y	9.88E-04	4.13E-04	-4.61E-05	6.21E-04	-
50-32-8	BENZO(A)PYRENE	Y	Y	Y	Y	5.75E-04	2.75E-04	-3.07E-05	3.31E-04	-
205-99-2	BENZO(B)FLUORANTHENE		Y	Y	Y	5.41E-04	4.13E-04	-4.61E-05	1.74E-04	-
191-24-2	BENZO(G,H,I)PERYLENE		Y		Y	1.11E-03	2.75E-04	-3.07E-05	8.61E-04	-
206-44-0	BENZO(J,K)FLUORENE (FLUORANTHENE)		Y		Y	1.40E-02	6.88E-04	-7.68E-05	1.34E-02	-
207-08-9	BENZO(K)FLUORANTHENE		Y	Y	Y	6.40E-04	4.13E-04	-4.61E-05	2.73E-04	-
53-70-3	DIBENZO(A,H)ANTHRACENE		Y	Y	Y	1.27E-03	2.75E-04	-3.07E-05	1.03E-03	-
57-97-6	DIMETHYLBENZ(A)ANTHRACENE, 7,12-		Y		Y	3.26E-03	3.67E-03	-4.10E-04	-	-
86-73-7	FLUORENE		Y		Y	5.20E-02	6.42E-04	-7.17E-05	5.14E-02	-
193-39-5	INDENO(1,2,3-CD)PYRENE		Y	Y	Y	1.03E-03	4.13E-04	-4.61E-05	6.60E-04	-
56-49-5	3-METHYLCHLORANTHRENE		Y		Y	3.67E-04	4.13E-04	-4.61E-05	-	-
91-57-6	2-METHYLNAPTHALENE		Y		Y	4.89E-03	5.50E-03	-6.15E-04	-	-
91-20-3	NAPHTHALENE		Y		Y	1.09E+00	1.40E-01	-1.56E-02	1.49E-01	8.12E-01
85-01-8	PHENANTHRENE		Y		Y	5.52E-02	3.90E-03	-4.35E-04	5.17E-02	-
PAH	POLYCYCLIC AROMATIC HYDROCARBONS		Y	Y	Y	1.47E+00	-	-	2.96E-01	1.18E+00
POM	POLYCYCLIC ORGANIC MATTER (POM)		Y		Y	1.42E-01	1.60E-01	-1.79E-02	-	-
129-00-0	PYRENE		Y		Y	9.43E-03	1.15E-03	-1.28E-04	8.41E-03	-

Application .22A

(see Appendix B to application .22A, page)

Emissions Summary of Proposed Permit Changes

CAS #	Compound	TAP	HAP	Total Emissions ton/yr	{B-3} BLRS ton/yr	{B-4} GENS ton/yr	{B-4} TANKS ton/yr
Greenhouse Gas Pollutants							
CO_2	CARBON DIOXIDE			-717.25	-1.82E+03	1.10E+03	-
CH_4	METHANE			-0.007	-5.46E-02	4.76E-02	-
N_2O	NITROUS OXIDE			-0.007	-1.68E-02	9.77E-03	-
Criteria Pollutants							
CO	CARBON MONOXIDE			23.99	1.90E+01	5.01E+00	-
NO_x	NITROGEN OXIDE			31.25	9.48E+00	2.18E+01	-
PM	PARTICULATE MATTER			1.52	1.15E+00	3.64E-01	-
PM_{10}	PARTICULATE MATTER (LESS THAN 10µ)			1.81	1.53E+00	2.79E-01	-
$PM_{2.5}$	PARTICULATE MATTER (LESS THAN 2.5µ)			1.90	1.63E+00	2.68E-01	-
SO_2	SULFUR DIOXIDE			-1.28	-1.19E+00	-9.13E-02	-
VOC	VOLATILE ORGANIC COMPOUNDS			1.86	1.29E+00	4.89E-01	8.28E-02
Organic Compounds		***TAP***	***HAP***				
POM	POLYCYCLIC ORGANIC MATTER (POM)		Y	8.94E-04	-4.87E-04	1.38E-03	-
106-99-0	1,3-BUTADIENE	Y	Y	-2.78E-03	-2.77E-03	-1.38E-05	1.29E-06
91-57-6	2-METHYLNAPHTHALENE		Y	5.38E-06	5.38E-06	0.00E+00	-
56-49-5	3-METHYLCHOLANTHRENE		Y	3.99E-07	3.99E-07	0.00E+00	-
540841	2,2,4-TRIMETHYLPENTANE		Y	3.51E-05	-	-	3.51E-05
57-97-6	7,12-DIMETHYLBENZ(A)ANTHRACENE		Y	3.59E-06	3.59E-06	0.00E+00	-
83-32-9	ACENAPHTHENE		Y	3.17E-05	3.92E-07	3.14E-05	-
203-96-8	ACENAPHTHYLENE		Y	-7.73E-03	-7.73E-03	0.00E+00	-
120-12-7	ANTHRACENE		Y	8.18E-06	4.66E-07	7.71E-06	-
75-07-0	ACETALDEHYDE	Y	Y	-6.57E-02	-6.56E-02	-9.85E-05	-
107-02-8	ACROLEIN	Y	Y	-7.67E-02	-7.67E-02	2.11E-05	-
7664417	AMMONIA	Y		-1.50E-01	-1.50E-01	0.00E+00	-
56-55-3	BENZ(A)ANTHRACENE		Y	3.99E-06	3.53E-07	3.64E-06	-
71-43-2	BENZENE	Y	Y	5.17E-03	-2.42E-04	4.95E-03	4.62E-04
50-32-8	BENZO(A)PYRENE	Y	Y	-1.95E-07	-1.88E-06	1.68E-06	-
205-99-2	BENZO(B)FLUORANTHENE		Y	6.81E-06	-7.12E-07	7.52E-06	-
191-24-2	BENZO(G,H,I)PERYLENE		Y	3.78E-06	1.66E-07	3.61E-06	-
207-08-9	BENZO(K)FLUORANTHENE		Y	1.83E-06	4.04E-07	1.43E-06	-
POMTV	BIPHENYL		Y	0.00E+00	-	-	0.00E+00
218-01-9	CHRYSENE		Y	1.07E-05	4.04E-07	1.03E-05	-
1319773	CRESOL (MIXED ISOMERS)	Y	Y	0.00E+00	-	-	0.00E+00
53-70-3	DIBENZO(A,H)ANTHRACENE		Y	2.42E-06	2.69E-07	2.15E-06	-
25321-22-6	DICHLOROBENZENE		Y	2.69E-04	2.69E-04	0.00E+00	-
100-41-4	ETHYL BENZENE		Y	1.83E-04	1.17E-04	0.00E+00	6.59E-05
206-44-0	FLUORANTHENE		Y	2.54E-05	6.73E-07	2.47E-05	-
86-73-7	FLUORENE		Y	7.75E-05	6.29E-07	7.68E-05	-
50-00-0	FORMALDEHYDE	Y	Y	6.04E-03	5.91E-03	1.22E-04	-
110-54-3	HEXANE	Y	Y	4.04E-01	4.03E-01	0.00E+00	4.01E-04
7647-01-0	HYDROGEN CHLORIDE	Y		-4.08E-02	-4.08E-02	0.00E+00	-
193-39-5	INDENO(1,2,3-CD)PYRENE		Y	3.09E-06	4.04E-07	2.69E-06	-
1634044	METHYL TERT-BUTYL ETHER		Y	0.00E+00	-	-	0.00E+00
91-20-3	NAPHTHALENE		Y	-1.47E-04	-1.02E-03	8.55E-04	2.24E-05
85-01-8	PHENANATHRENE		Y	2.71E-04	3.82E-06	2.67E-04	-
108952	PHENOL	Y	Y	0.00E+00	-	-	0.00E+00
129-00-0	PYRENE		Y	2.47E-05	1.12E-06	2.36E-05	-
100425	STYRENE	Y	Y	0.00E+00	-	-	0.00E+00
108-88-3	TOLUENE	Y	Y	2.87E-03	3.90E-04	1.77E-03	7.11E-04
1330-20-7	XYLENE	Y	Y	2.26E-03	2.72E-04	1.21E-03	7.76E-04
Metals		***TAP***	***HAP***				
ASC	ARSENIC	Y	Y	-5.21E-05	-7.79E-05	2.58E-05	-
BEC	BERYLLIUM	Y	Y	-6.87E-05	-8.81E-05	1.94E-05	-
CDC	CADMIUM	Y	Y	1.69E-04	1.46E-04	2.29E-05	-
CRC	CHROMIUM		Y	2.30E-04	2.11E-04	1.94E-05	-
CBC	COBALT		Y	1.89E-05	1.89E-05	0.00E+00	-
PBC	LEAD		Y	-1.06E-04	-1.64E-04	5.81E-05	-
MNC	MANGANESE	Y	Y	-6.09E-05	-9.96E-05	3.87E-05	-
HGC	MERCURY	Y	Y	-1.54E-05	-3.47E-05	1.94E-05	-
NIC	NICKEL	Y	Y	3.84E-04	3.61E-04	2.29E-05	-
SEC	SELENIUM		Y	-3.51E-04	-4.48E-04	9.68E-05	-