# AIR AND RADIATION ADMINISTRATION
# DRAFT PART 70 OPERATING PERMIT

## DOCKET # 24-003-00316

**COMPANY**: U.S. Coast Guard Yard

**LOCATION**: 2401 Hawkins Point Road, Baltimore,
Anne Arundel County, MD 21226

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**ITEM DESCRIPTION**

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**
**AIR AND RADIATION ADMINISTRATION**
**AIR QUALITY PERMITS PROGRAM**

# PART 70/ TITLE V OPERATING PERMIT PROGRAM OVERVIEW

## Origin of the Part 70 Operating Permit

Title V of the Clean Air Act (amended) requires each state to implement a federally enforceable operating permit program for major sources of air pollution. This program, the Part 70 Permit Program, also known as the Title V Permit Program, is designed to provide a comprehensive administrative document (a Part 70 Permit) that will identify all air emissions sources at a given facility with the applicable federal regulations, and will establish the methodology by which the owner/operator will demonstrate compliance. Required testing, monitoring, record-keeping, and reporting for each emissions source are identified, including regulation citation. This Operating Permit is a five-year renewable permit. A responsible official for each facility subject to a Part 70 Operating Permit is required to annually certify compliance with each applicable requirement for that facility.

The Department has had an Air Quality Operating Permit program for many years. The State-Only enforceable permit conditions and applicable regulations listed in Air Quality Permits to Construct issued to a facility will be incorporated into the Part 70 Operating Permit in a separate section. The Department will continue to enforce these state-only requirements. The Part 70 Operating permit will supersede a facility's current State Permit to Operate upon issuance.

Part 70 Operating permits are not for new construction, and do not add any new emissions limitations, standards, or work practices on an affected facility. There may, however, be additional testing, record keeping, monitoring, and reporting requirements. A few facilities which were not subject to Maryland's existing State Permit to Operate Program will be subject to the requirements of the Part 70 Program. The Part 70 Program is based on a facility's potential to emit regulated air pollutants. The State Permit to Operate program is based on types of sources specifically listed in the Code of Maryland Regulations (COMAR). For these few facilities which were not required to receive a state Permit to Operate but are subject to a Part 70 permit, there will be the additional burdens of certifying emissions annually and paying an annual emissions-based permit fee.

## Part 70 Permit Issuance Process

The Department will undertake a technical review of the Part 70 permit application and will prepare a draft Permit and Fact Sheet. The Fact Sheet will explain the basis and technical analysis used by the Department to develop federally enforceable permit conditions, including the required testing, monitoring, record keeping, and reporting provisions for each emissions unit at the permitted facility. The Fact Sheet will also include a description of the facility operations and the current compliance status with applicable requirements. If there are any discrepancies between the Part 70 permit application and the draft permit, the Fact Sheet will contain a discussion of the inconsistencies and the final resolution.

The Part 70 Program provides the public, adjacent states, and EPA the opportunity to review and submit comments on draft Part 70 permits. The public may also request a public hearing on the draft permit. Dockets containing a facility's permit application, supporting documents, draft Permit and Fact Sheet will be available for review both at MDE headquarters located at 1800 Washington Boulevard, Baltimore, MD and a public library near the facility's location. Please note: during Covid restrictions, the dockets will be made available on-line only at: https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/title5draftpermits.aspx

## Public Participation Process

The initial step of the Part 70/ Title V public participation process is the publication of a notice of intent to issue a Part 70 Permit and opportunity for concerned citizens to submit written comments and/ or request a public hearing. The Department will publish the notice at least one time in the legal section of a newspaper of general circulation in the area where the facility is located. The Notice will provide the description of the facility for which a Part 70 permit has been drafted, the location of the docket which contains the application and draft permit conditions with supporting documentation, and the requirements for requesting a public hearing. The applicant is responsible for all costs incurred in the publication of this legal notice. The Department will also send notification to adjacent states, local public officials and interested parties, will include the notice in the docket at the library, and/or post the notice to the Department's website.

The public will have 30 days from the date the notice appears in the newspaper to submit written comments to the Department, or to request in writing a public hearing. Adjacent states will have 30 days from the receipt of notification to submit written comments to the Department.

A request for a public hearing must be made in writing within the 30-day comment period. Comments and hearing requests should be sent to the attention of the Air Quality Permits Program Public Participation Coordinator, Ms. Shannon Heafey via email at Shannon.heafey@maryland.gov or mailed to The Air and Radiation Administration, 1800 Washington Boulevard, Suite 720, Baltimore, MD 21230-1720.

## Public Hearing

The purpose of a public hearing is to give interested parties the opportunity to submit comments for the record which are germane to the draft federally enforceable permit conditions. Comments submitted at the hearing, or in writing to the Department during the comment period, should address errors and deficiencies in the permit such as unidentified emissions units, incorrect or deficient regulation citation, deficient record keeping, monitoring, reporting or testing requirements and unresolved compliance issues.

If a public hearing is requested, the Department will make arrangements with the facility to schedule a hearing and will send notification of the hearing to public officials, interested parties, and the EPA. The Department will publish a notice of the scheduled hearing in the legal section of the same newspaper in which the opportunity notification appeared, at least one time and at least 30 days prior to the hearing. The notice will state the date, time, and location of the hearing. During Covid restrictions, public hearings may be held on-line. This public notice will also be posted on the MDE Air Permits Program web page.

After the public comment period has closed, the Department will review the formal testimony as part of the final review and prepare a Response to Comments document which will be sent to the EPA along with the draft Part 70 Permit and Fact Sheet.

Testimony on state-only requirements will be kept on file at the Department as part of the formal record, however, state-only rules and regulations are not federally enforceable, and therefore are not within the scope of the EPA review. The Department will keep a record of the identity of the commentors, their statements, a summary of the issues raised during the public comment period, and the Response to Comments document for at least five years.

## Citizen Petition to EPA to Object to Permit Issuance

Interested parties may petition the EPA to object to the Part 70 Permit if the EPA has not already objected, within 60 days after the 45-day EPA review period has ended. The petition period will be posted on the EPA website. The EPA will only consider objections to the federally enforceable provisions of the draft permit which were raised with reasonable specificity during the public comment period, unless: (1) the petitioner demonstrates that it was impractical to raise the objections within the public comment period, or (2) the grounds for the objection arose after the comment period. If the EPA agrees with the petition, the Department will reopen, revise, or revoke the permit as determined.

## Applicant Objection to Permit Issuance and Recourse

If the applicant objects to the federally enforceable permit conditions contained in the issued Part 70/Title V Operating permit, it has 15 days from receipt of the issued Permit to request a contested case hearing. More information on that can be found in 40CFR70, and COMAR 26.11.03.11.

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**
**AIR AND RADIATION ADMINISTRATION**

**NOTICE OF INTENT TO ISSUE PART 70 OPERATING PERMIT, OPPORTUNITY TO SUBMIT WRITTEN COMMENTS OR TO REQUEST A PUBLIC HEARING**

The Department of the Environment, Air and Radiation Administration (ARA) has completed its review of the application for a renewal Part 70 Operating Permit submitted by the US Coast Guard Yard, located in Anne Arundel County, MD. The facility consists of: boilers, internal combustion engines, as well as engine painting, surface coating, and fiberglass fabrication operations, and emergency power generators.

The applicant is represented by:

Mr. Stephen A. Roncone, CDR
Chief, Facilities Management Department
United States Coast Guard Yard
2401 Hawkins Point Road
Baltimore, MD 21226-1797

The Department has prepared a draft Part 70 Operating Permit for review and is now ready to receive public comment. A docket containing the draft permit, application, supporting documentation and fact sheet is available for review. Docket #24-003-00316 is available for public inspection on the Department's website at the following link:

(https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/title5draftpermits.aspx

Interested persons may submit written comments or request a public hearing on the draft permit. Written comments must be received by the Department no later than 30 days from the date of this notice. Requests for a public hearing must be submitted in writing and must also be received by the Department no later than 30 days from the date of this notice.

Comments and requests for a public hearing will be accepted by the Department if they raise issues of law or material fact regarding applicable requirements of Title V of the Clean Air Act, and/or regulations implementing the Title V Program in Maryland found in COMAR.

A Request for public hearing shall include the following:

1) The name, mailing address, and telephone number of the person making the request;

2) The names and addresses of any other persons for whom the person making the request if representing; and

3) The reason why a hearing is requested, including the air quality concern that forms the basis for the request and how this concern relates to the person making the request.

All written comments and requests for a public hearing should be directed to the attention of Ms. Shannon Heafey, Title V Coordinator, via email at Shannon.heafey@maryland.gov, or mailed to The Air Quality Permits Program, Air and Radiation Administration, 1800 Washington Boulevard Suite 720, Baltimore, Maryland 21230-1720.

Further information may be obtained by emailing Ms. Heafey or calling (410) 537-4433.

## BACKGROUND

The United States Coast Guard Yard at Curtis Bay, Maryland under the U.S. Department of Homeland Security, is responsible for refurbishing, repairing, servicing, fabricating, and assembling various Coast Guard, Federal, State, and Local Government marine vessels, equipment, and aids to navigation (buoys). These operations include various sources of air emissions at the 113-acre facility. Primary air emission sources include one (1) 65 MMBtu/hr triple-fuel (LFG/NG/No 2)-fired boiler, two (2) 15 MMBtu/hr dual fuel-fired boilers, four (4) dual-fired (landfill and natural gas) internal combustion engines, as well as engine painting, surface coating, and fiberglass fabrication operations. Other smaller sources of air emissions include small boilers, storage tanks, parts degreasing, small painting operations, abrasive blasting, and emergency power generators

The primary SIC codes for the facility are 9711 (national security), 3732 (ship building and repairing), and 3731 (boat building and repairing).

The following table summarizes the actual emissions from US Coast Guard Yard based on its Annual Emission Certification Reports:

**Table 1: Actual Emissions**

| Year | $NO_x$ (TPY) | $SO_x$ (TPY) | $PM_{10}$ (TPY) | CO (TPY) | VOC (TPY) |
|---|---|---|---|---|---|
| 2019 | 10.17 | 0.612 | 0.028 | 35.33 | 16.48 |
| 2018 | 17.14 | 2.34 | 0.11 | 60.86 | 24.07 |
| 2017 | 20.85 | 0.46 | 0.018 | 63.44 | 20.04 |
| 2016 | 16.37 | 0.29 | 0.016 | 44.16 | 21.18 |
| 2015 | 14.63 | 0.70 | 0.034 | 41.45 | 26.86 |

The major source threshold for triggering Title V permitting requirements in Anne Arundel County is 25 tons per year for VOC, 25 tons for NOx, and 100 tons per year for any other criteria pollutants and 10 tons for a single HAP or 25 tons per year for total HAPS. Since the actual VOC emissions from the facility are greater than the major source threshold, US Coast Guard Yard is required to obtain a Title V – Part 70 Operating Permit under COMAR 26.11.03.01.

The Department received the U.S. Coast Guard Yard's Part 70 renewal permit application on November 14, 2019. An administrative completeness review was conducted and the application was deemed to be administratively complete. An administrative completeness determination letter was sent to U.S. Coast Guard

Yard on December 2, 2019 granting U.S. Coast Guard Yard an application shield.

## NSPS AND NESHAP APPLICABILITY

- US Coast Guard Yard maintains an engine painting, surface coating, and fiberglass fabrication operations. The Permittee performs engine painting and surface coating operations in multiple locations, including, but not limited to, Buildings 90, 32, 40, 78, and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations [**MDE Reg. No. 6-0902**]. This operation is subject to COMAR 26.11.19.27, "Control of Volatile Organic Compounds from Marine Vessel Coating Operations," and 40 CFR 63, Subpart II, "National Emission Standard for Shipbuilding and Ship Repair (Surface Coating)." The described operations meet the definitions and the applicability stated in both rules. The Permittee may opt to demonstrate compliance with COMAR 26.11.19.27 by following the procedures outlined in the 40 CFR, 40 CFR 63, Subpart II. The fiberglass application operation [**MDE Reg. No. 6-0903**] is located in Building 32. This operation is subject to the requirements listed in COMAR 26.11.19.16.
  Furthermore, the fiberglass application activities are not subject to COMAR 26.11.19.27, or to 40 CFR 63, Subpart II. The described fiberglass operations are not surface coating operation but rather a fiberglass maintenance activity serving existing vessel at the location.

- US Coast Guard Yard maintains three (3) boilers with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction, modification, or reconstruction began after June 9, 1989, which are subject to 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. One of the boilers (EU-02) [**MDE Reg. No. 5-0497**] was originally install on April 1981, but later modified in 2009. Two of the boilers (EU-03) [**MDE Reg. Nos. 4-0824** and **4-0825**] were installed on July 2004. These boilers are not subject to the PM emission standards in 40CFR §60.43c, because they are not burning coal or wood. Also, the PM standards are not applicable during the burning of No.2 oil, because the PM standards do not apply when burning fuels that contain no more than 0.50 weight percent. These boilers are restricted to not burn any fuel with a sulfur content by weight in excess of or which otherwise exceeds, 0.3 percent."
  "A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: In Areas III and IV: (b) Distillate fuel oils, 0.3 percent." [**Reference: COMAR 26.11.09.07A (2)**]

Finally, these three boilers use No. 2 fuel oil only as backup or in periods of gas curtailment, and therefore are not subject to 40 CFR 63, Subpart JJJJJJ – "National Emissions Standards for Industrial, Commercial, and Institutional Boilers, Area Sources."

- US Coast Guard Yard has four (4) generators, which are subject to the requirements listed in 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. Three (3) of the generators [**MDE Reg. Nos. 9-0889, 9-0891,** and **9-0892**] are subject to Subpart JJJJ rule standards that are applicable to engines with a manufacturing date prior to July 1, 2007. On October 2019, the Permittee installed a new generator (a replacement for one of the existing generators). This new generator [MDE Reg. No. & 9-1185] is also subject to the Subpart JJJJ rule standards, which are slightly stricter for engines manufactured after July 1, 2010. The generators are also subject to 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Reciprocating Internal Combustion Engines (RICE). However, compliance with the 40 CFR 63, Subpart ZZZZ is demonstrated by complying with 40 CFR 60, Subpart JJJJ. Among other requirements, the Permittee must conduct stack performance test to the generators (engines) every 3 years or 8,760 hours of operation, whichever comes first. The most recent performance stack test was conducted on January 15-17, 2020. The test results showed all four (4) engines in compliance.

## COMPLIANCE ASSURANCE MONITORING (CAM)

US Coast Guard Yard conducted a Compliance Assurance Monitoring (CAM) analysis for the facility and determined that the facility is not subject to the (CAM) Rule 40 CFR Subpart 64. CAM is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act for large emission units that rely on air pollution control (APC) equipment to achieve compliance. The CAM approach establishes monitoring for the purpose of: (1) documenting continued operation of the control measures within ranges of specified indicators of performance (such as emissions, control device parameters, and process parameters) that are designed to provide a reasonable assurance of compliance with applicable requirements; (2) indicating any excursions from these ranges; and (3) responding to the data so that the cause or causes of the excursions are corrected. In order for a unit to be subject to CAM, the unit must be located at a major source, be subject to an emission limitation or standard; use a control device to achieve compliance; have pre-control emissions of at least 100% of the major source amount (for initial CAM submittals); and must not otherwise be exempt from CAM. Applicability determinations are made on a pollutant-by-pollutant basis for each emission unit.

US Coast Guard Yard has no large emission units that rely on air pollution control (APC) equipment to achieve compliance, therefore the facility is not subject to CAM.

## GREENHOUSE GAS (GHG) EMISSIONS

US Coast Guard Yard emits the following greenhouse gases (GHGs) related to Clean Air Act requirements: carbon dioxide, methane, and nitrous oxide. These GHGs originate from various processes (i.e., boilers, internal combustion engines) contained within the facility premises applicable to US Coast Guard Yard. The facility has not triggered Prevention of Significant Deterioration (PSD) requirements for GHG emissions; therefore, there are no applicable GHG Clean Air Act requirements. While there may be no applicable requirements as a result of PSD, emission certifications reports for the years 2017, 2018, and 2019, showed that US Coast Guard Yard is not a major source (threshold: 100,000tpy $CO_2e$) for GHGs (see Table 2 shown below). The Permittee shall quantify facility wide GHG emissions and report them in accordance with Section 3 of the Part 70 permit.

The following table summarizes the actual emissions from US Coast Guard Yard based on its Annual Emission Certification Reports:

**Table 2: Greenhouse Gases Emissions Summary**

| GHG | Conversion factor | 2017 tpy $CO_2e$ | 2018 tpy $CO_2e$ | 2019 tpy $CO_2e$ |
|---|---|---|---|---|
| Carbon dioxide, $CO_2$ | 1 | 8,039.77 | 8583.44 | 6,133.30 |
| Methane, $CH_4$ | 25 | 8.38 | 8.15 | 7.38 |
| Nitrous Oxide, $N_2O$ | 298 | 13.41 | 14.01 | 12.52 |
| **Total** GHG, $CO_{2eq}$ | | **8,061.56** | **8,605.60** | **6,153.18** |

## EMISSION UNIT IDENTIFICATION

US Coast Guard Yard has identified the following emission units as being subject to Title V permitting requirements and having applicable requirements:

**Table 3: Emission Unit Identification**

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| **Painting and Coating Operations** | | | | |
| EU01 | 6-0902 | Engine Painting and Surface Coating | Engine Painting and Surface Coating operations in multiple locations, including, but not limited to Buildings 90, 32, 40, 78 (includes three paint booth process heaters), and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations | Jan 1943 with some Operations consolidated Mar 2004 |
| EU01 | 6-0903 | Fiberglass Application | Fiberglass Application operations in Bldg 32 | Dec 1978; moved Mar 2004 |
| **Boilers** | | | | |
| EU02 | 5-0497 | Boiler | One (1) Keeler DS-55 natural gas/landfill gas/No. 2 fuel oil fired boiler rated at 65 MMBtu/hr heat input. [Space heater] | Apr 1981, modified in 2009 |
| EU03 | 4-0824 | Boiler | One (1) Vapor Power International Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input. [Space heater] | Jul 2004 |
| EU03 | 4-0825 | Boiler | One (1) Vapor Power International | Jul 2004 |

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| | | | Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input. [Space heater] | |
| **Landfill Gas Cogeneration Plant** | | | | |
| EU04 | 9-0889 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |
| EU04 | 9-0891 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |
| EU04 | 9-0892 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |
| EU04 | 9-1185 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped | October 2019 |

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| | | | with heat recovery steam generators (HRSG) | |

## AN OVERVIEW OF THE PART 70 PERMIT

The Fact Sheet is an informational document. If there are any discrepancies between the Fact Sheet and the Part 70 permit, the Part 70 permit is the enforceable document.

Section I of the Part 70 Permit contains a brief description of the facility and an inventory list of the emissions units for which applicable requirements are identified in Section IV of the permit.

Section II of the Part 70 Permit contains the general requirements that relate to administrative permit actions. This section includes the procedures for renewing, amending, reopening, and transferring permits, the relationship to permits to construct and approvals, and the general duty to provide information and to comply with all applicable requirements.

Section III of the Part 70 Permit contains the general requirements for testing, record keeping and reporting; and requirements that affect the facility as a whole, such as open burning, air pollution episodes, particulate matter from construction and demolition activities, asbestos provisions, ozone depleting substance provisions, general conformity, and acid rain permit. This section includes the requirement to report excess emissions and deviations, to submit an annual emissions certification report and an annual compliance certification report, and results of sampling and testing.

Section IV of the Part 70 Permit identifies the emissions standards, emissions limitations, operational limitations, and work practices applicable to each emissions unit located at the facility. For each standard, limitation, and work practice, the permit identifies the basis upon which the Permittee will demonstrate compliance. The basis will include testing, monitoring, record keeping, and reporting requirements. The demonstration may include one or more of these methods.

Section V of the Part 70 Permit contains a list of insignificant activities. These activities emit very small quantities of regulated air pollutants and do not require a permit to construct or registration with the Department. For insignificant activities that are subject to a requirement under the Clean Air Act, the requirement is listed under the activity.

Section VI of the Part 70 Permit contains State-only enforceable requirements. Section VI identifies requirements that are not based on the Clean Air Act, but solely on Maryland air pollution regulations. These requirements generally relate to the prevention of nuisances and implementation of Maryland's Air Toxics Program.

## REGULATORY REVIEW/TECHNICAL REVIEW/COMPLIANCE METHODOLOGY

### Emission Unit – Painting and Coating Operations - EU 01

**Reg. No. 6-0902** – Engine Painting and Surface Coating operations in multiple locations, including, but not limited to Buildings 90, 32, 40, 78, and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations

**Reg. No. 6-0903** – Fiberglass Application operations in Bldg 32

**A. Control of Visible Emissions**

"In Areas III and IV a person may not cause or permit the discharge of emissions from any installation or building, other than water in an uncombined form, which is visible to human observers." **[Reference: COMAR 26.11.06.02C(2)]**

"The visible emissions standards in C of this regulation do not apply to emissions during start-up and process modifications or adjustments, or occasional cleaning of control equipment, if: (a) The visible emissions are not greater than 40 percent opacity; and (b) The visible emissions do not occur for more than 6 consecutive minutes in any 60 minute period." **[Reference: COMAR 26.11.06.02A(2)]**

**Compliance Demonstration**

Every six months, the Permittee shall conduct a 1-minute visual observation of the engine painting operation stack, surface coating operations stack, fabric coating operation stack, abrasive blasting and surface preparations and the steel shot abrasive blasting stack exhaust. The visual observation must be conducted while the specific process is in operation. If visible emissions are observed

during any visual observation, the Permittee must resume the observation of the specific process exhaust on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly visual observations. If visible emissions are observed during any observation, the Permittee must inspect specific process for cause of visible emission and perform necessary adjustments or repairs within 24-hours or prior to operating the stripping operation. If visible emissions have not been eliminated, the Permittee shall perform daily 18-minute visual observation for opacity in accordance with EPA Reference Method 9 when operating the specific process. The Permittee shall maintain on site a log of the dates and results of visible emissions observations for a period of at least 5 years. The Permittee shall report incidents of visible emissions in accordance with Permit Condition 4, Section III, Plant Wide Condition, "Report of Excess Emissions and Deviations." **[Reference: COMAR 26.11.03.06C]**

**B. Control of Particulate Matter**

"A person may not cause or permit to be discharged into the outdoor atmosphere from any other installation, particulate matter in excess of 0.03 gr/SCFD (68.7 mg/dscm)." **[Reference: COMAR 26.11.06.03B(2)(a)]**

"A person may not cause or permit emissions from an unconfined source without taking reasonable precautions to prevent particulate matter from becoming airborne. These reasonable precautions shall include, when appropriate as determined by the Department, the installation and use of hoods, fans, and dust collectors to enclose, capture, and vent emissions. In making this determination, the Department shall consider technological feasibility, practicality, economic impact, and the environmental consequences of the decision." **[Reference: COMAR 26.11.06.03C(1)]**

**Compliance Demonstration**

The Permittee shall continue implementing the existing preventive maintenance plan for the control equipment that describes the maintenance activity and time schedule for completing each activity. The Permittee shall perform maintenance activities within the time frames established in the plan and shall maintain a log with records of the dates and description of the maintenance that was performed. The Permittee shall maintain a copy of the preventive maintenance plan and a record of the dates of and description of maintenance activity performed. **[Reference: COMAR 26.11.03.06C]**

COMAR 26.11.06.03C(1) – Particulate Matter from Unconfined Sources. "A person may not cause or permit emissions from an unconfined source without taking reasonable precautions to prevent particulate matter from becoming airborne. These reasonable precautions shall include, when appropriate as

determined by the Department, the installation and use of hoods, fans, and dust collectors to enclose, capture, and vent emissions. In making this determination, the Department shall consider technological feasibility, practicality, economic impact, and the environmental consequences of the decision."

## C. Control of VOC Emissions

COMAR 26.11.19.02I – Good Operating Practices, Equipment Cleanup, and VOC Storage.

(1) Applicability. The requirements in this section apply to a person who owns or operates an installation that is subject to any requirement in this chapter.

(2) Good Operating Practices.
- (a) A person who is subject to this section shall implement good operating practices to minimize VOC emissions into the atmosphere.
- (b) Good operating practices shall, at a minimum, include the following:
  - (i) Provisions for training of operators on practices, procedures, and maintenance requirements that are consistent with the equipment manufacturers' recommendations and the source's experience in operating the equipment, with the training to include proper procedures for maintenance of air pollution control equipment;
  - (ii) Maintenance of covers on containers and other vessels that contain VOC and VOC-containing materials when not in use;
  - (iii) Minimize spills of VOC-containing cleaning materials;
  - (iv) Convey VOC-containing cleaning materials from one location to another in closed containers or pipelines;
  - (v) Minimize VOC emissions from cleaning of storage, mixing, and conveying equipment;
  - (vi) As practical, scheduling of operations to minimize color or material changes when applying VOC coatings or other materials by spray gun;
  - (vii) For spray gun applications of coatings, use of high volume low pressure (HVLP) or other high efficiency application methods where practical; and
  - (viii) As practical, mixing or blending materials containing VOC in closed containers and taking preventive measures to minimize emissions for products that contain VOC.
- (c) A person subject to this regulation shall:
  - (i) Establish good operating practices in writing;
  - (ii) Make the written operating practices available to the Department upon request; and

(iii) Display the good operating practices so that they are clearly visible to the operator or include them in operator training.

(3) Equipment Cleanup.

(a) A person subject to this section shall take all reasonable precautions to prevent or minimize the discharge of VOC into the atmosphere when cleaning process and coating application equipment, including containers, vessels, tanks, lines, and pumps.

(b) Reasonable precautions for equipment cleanup shall, at a minimum, include the following:

(i) Storing all wastes and waste materials, including cloth and paper that are contaminated with VOC, in closed containers;

(ii) Preparing written standard operating procedures for frequently cleaned equipment, including when practical, provisions for the use of low-VOC or non-VOC materials and procedures to minimize the quantity of VOC materials used;

(iii) Using enclosed spray gun cleaning, VOC-recycling systems and other spray gun cleaning methods where practical that reduce or eliminate VOC emissions; and

(iv) Using, when practical, detergents, high-pressure water, or other non-VOC cleaning options to clean coating lines, containers, and process equipment.

(4) VOC Storage and Transfer.

(a) A person subject to this section who stores VOCs shall, at a minimum, install conservation vents or other vapor control measures on storage tanks with a capacity of 2,000 gallons or more to minimize VOC emissions.

(b) A person subject to this section shall, at a minimum, utilize vapor balance, vapor control lines, or other vapor control measures when VOCs are transferred from a tank truck into a stationary storage tank with a capacity greater than 10,000 gallons and less than 40,000 gallons that store VOCs or materials containing VOCs, other than gasoline, that have a vapor pressure greater than 1.5 psia.

Control of VOC Equipment Leaks.

COMAR 26.11.19.16 – General Requirements.

“A person subject to this regulation shall comply with all of the following requirements:

(1) Visually inspect all components on the premises for leaks at least once each calendar month.

(2) Tag any leak immediately so that the tag is clearly visible. The tag shall be made of a material that will withstand any weather or corrosive conditions to which it may be normally exposed. The tag shall bear an identification

number, the date the leak was discovered, and the name of the person who discovered the leak. The tag shall remain in place until the leak has been repaired.

(3) Take immediate action to repair all observed VOC leaks that can be repaired within 48 hours.

(4) Repair all other leaking components not later than 15 days after the leak is discovered. If a replacement part is needed, the part shall be ordered within 3 days after discovery of the leak, and the leak shall be repaired within 48 hours after receiving the part.

(5) Maintain a supply of components or component parts that are recognized by the source to wear or corrode, or that otherwise need to be routinely replaced, such as seals, gaskets, packing, and pipe fittings.

(6) Maintain a log that includes the name of the person conducting the inspection and the date on which leak inspections are made, the findings of the inspection, and a list of leaks by tag identification number. The log shall be made available to the Department upon request. Leak records shall be maintained for a period of not less than 2 years from the date of their occurrence." **[Reference: COMAR 26.11.19.16(C)]**

"Exceptions. Components that cannot be repaired as required in this regulation because they are inaccessible, or that cannot be repaired during operation of the source, shall be identified in the log and included within the source's maintenance schedule for repair during the next source shutdown." **[Reference: COMAR 26.11.19.16(D)]**

**Compliance Demonstration**

The Permittee shall visually inspect all components on the premises for VOC leaks at least once each calendar month following the procedures specified in COMAR 26.11.19.16. The Permittee shall maintain a log that includes the name of the person conducting the inspection and the date on which leak inspections are made, the findings of the inspection, a list of leaks by tag identification number and identity of components that cannot be repaired as required in this regulation because they are inaccessible, or that cannot be repaired during operation if the source. The log shall be made available to the Department upon request. Leak records, along with the log shall be maintained for a period of not less than 2 years from the date of their occurrence. **[Reference: COMAR 26.11.19.16C(6)]**

Control of Volatile Organic Compounds from Marine Vessel Coating Operations.

**Note 1**. Compliance with COMAR 26.11.19.27 will apply only to the engine painting and surface coating operations. **[MDE Reg. No. 6-0902]**

COMAR 26.11.19.27(A) – Applicability.
"This regulation applies to marine vessel coating operations at a premises where the total potential to emit VOC emissions equals or exceeds 25 tons (22.75 metric tons) per year or actual emissions of 20 pounds (9 kilograms) per day from all marine vessel coating operations at the premises." **[Reference: COMAR 26.11.19.27(A)]**

COMAR 26.11.19.27(C) – Coating Requirements.
"(1) Except as provided in §C(5) of this regulation, a person who owns or operates a marine vessel coating operation subject to this regulation may not apply a coating that exceeds the standards in §C(2), (3), and (4) of this regulation.

(2) Coating Standards. (*See table in the rule*)

(3) If a coating satisfies the definition of more than one category of coating listed in §C(2) of this regulation, then the coating is subject to the maximum VOC content for any applicable category.

(4) Any other coating used in a marine vessel coating operation not listed in §C(2) of this regulation may not exceed a VOC content of 2.83 pounds per gallon (340 grams per liter), as applied.

(5) A person who owns or operates a marine vessel coating operation subject to this regulation may apply a coating that exceeds the VOC content established in this regulation if:

(a) The VOC content of the coating does not exceed the otherwise applicable standard in §C(2), (3), or (4) of this regulation by more than 20 percent; and

(b) The coating exceeding the standards in §C(2), (3), or (4) of this regulation is used only during the period from November 1 of a year through March 31 of the following year." **[Reference: COMAR 26.11.19.27(C)]**

COMAR 26.11.19.27(D) – Cleanup Requirements.
"A person who owns or operates a marine vessel coating operation subject to this regulation shall take reasonable precautions to minimize the release of VOC into the atmosphere including:

(1) Storing all waste materials containing VOC, including cloth and paper, in closed containers;

(2) Maintaining lids on any VOC-bearing materials when not in use; and

(3) Using enclosed containers or VOC recycling equipment to clean spray gun equipment."**[Reference: COMAR 26.11.19.27(D)]**

COMAR 26.11.19.27(E) **–** Compliance Procedures.
"Compliance with the requirements of this regulation shall be achieved using the test methods and procedures in Regulation .02 of this chapter." **[Reference: COMAR 26.11.19.27(E)]**

**Note 2**. Compliance with COMAR 26.11.19.27 can be achieved by complying with the standards and procedures outlined in 40 CFR 63, Subpart II "National Emission Standard for Shipbuilding and Ship Repair (Surface Coating)."

**Compliance Demonstration**
The Permittee shall visually inspect all components on the premises for VOC leaks at least once each calendar month following the procedures specified in COMAR 26.11.19.16. The Permittee shall maintain the following records: (a) The monthly total volume and VOC content of each coating and coating solvent used that contain VOCs; and (b) The monthly total volume and VOC content of each cleanup solvent used that contains VOCs. Records shall be retained for 3 years and be made available to the Department on request.

## D. Control of Hazardous Air Pollutants

**Note:** Compliance with COMAR 26.11.19.27 will apply only to the engine painting and surface coating operations. **[MDE Reg. No. 6-0902]**

40 CFR 63, Subpart II **–** National Emission Standard for Shipbuilding and Ship Repair (Surface Coating).

**40 CFR §63.781 –** Applicability.
"(a) The provisions of this subpart apply to shipbuilding and ship repair operations at any facility that is a major source.

(b) The provisions of this subpart do not apply to coatings used in volumes of less than 200 liters (52.8 gallons) per year provided the total volume of coating exempt under this paragraph does not exceed 1000-liters per year (264 gallons per year) at any facility. Coatings exempt under this paragraph shall be clearly labeled as "low-usage exempt," and the volume of each such coating applied shall be maintained in the facility's records.

(c) The provisions of this subpart do not apply to coatings applied with hand-held, nonrefillable, aerosol containers or to unsaturated polyester resin (i.e. fiberglass lay-up) coatings. Coatings applied to suitably prepared fiberglass surfaces for protective or decorative purposes are not subject to this subpart.

(d) If you are authorized in accordance with 40 CFR 63.783(c) to use an add-on control system as an alternative means of limiting emissions from coating operations, in response to an action to enforce the standards set forth in this subpart, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by a malfunction, as defined in 40 CFR 63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all the requirements in the affirmative defense. The affirmative defense shall not be available in response to claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (d)(2) of this section, and must prove by a preponderance of evidence that:

(i) The excess emissions:

(A) Were caused by a sudden, infrequent and unavoidable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(iv) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury or severe property damage; and

(v) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction." **[Reference: 40 CFR §63.781]**

**40 CFR §63.783 –** Standards.
"(a) No owner or operator of any existing or new affected source shall cause or allow the application of any coating to a ship with an as-applied VOHAP content exceeding the applicable limit given in Table 2 of this subpart, as determined by the procedures described in §63.785 (c)(1) through (c)(4). For the compliance procedures described in §63.785 (c)(1) through (c)(3), VOC shall be used as a surrogate for VOHAP, and Method 24 of appendix A to 40 CFR part 60 shall be used as the definitive measure for determining compliance. For the compliance procedure described in §63.785(c)(4), an alternative test method capable of measuring independent VOHAP shall be used to determine compliance. The method must be submitted to and approved by the Administrator."

"(b) Each owner or operator of a new or existing affected source shall ensure that:
(1) All handling and transfer of VOHAP-containing materials to and from containers, tanks, vats, drums and piping system is conducted in a manner that minimizes spills.

(2) All containers, tanks, vats, drums, and piping systems are free of cracks, holes, and other defects and remain closed unless materials are being added to or removed from them."

"(c) Approval of alternative means of limiting emissions.
(1) The owner or operator of an affected source may apply to the Administrator for permission to use an alternative means (such as an add-on control system) of limiting emissions from coating operations. The application must include:
(i) An engineering material balance evaluation that provides a comparison of the emissions that would be achieved using the alternative means to those that would result from using coatings that comply with the limits in Table 2 of this subpart, or the results from an emission test that accurately measures the capture efficiency and control device efficiency achieved by the control system and the composition of the associated coatings so that the emissions comparison can be made;
(ii) A proposed monitoring protocol that includes operating parameter values to be monitored for compliance and an explanation of how the operating parameter values will be established through a performance test; and
(iii) Details of appropriate recordkeeping and reporting procedures.
(2) The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, post control emissions of VOHAP per volume applied solids will be no greater than those from the use of coatings that comply with the limits in Table 2 of this subpart.
(3) The Administrator may condition approval on operation, maintenance, and monitoring requirements to ensure that emissions from the source are no greater than those that would otherwise result from this subpart." **[Reference: 40 CFR §63.783]**

Table 2 to Subpart II of Part 63 – Volatile Organic HAP (VOHAP) Limits for Marine Coatings

| Coating Category | VOHAP Limits [abc] | | |
|---|---|---|---|
| | Gram/liter coating (minus water and exempt compounds | Grams/liter solids [d] | |
| | | $t \geq 4.5\ ^{o}C$ | $t < 4.5\ ^{o}C$ [e] |
| General Use | 340 | 571 | 728 |
| Specialty: | | | |
| Air flask | 340 | 571 | 728 |
| Antenna | 530 | 1439 | |
| Antifoulant | 400 | 765 | 971 |
| Heat resistant | 420 | 841 | 1069 |
| High gloss | 420 | 841 | 1069 |
| High temperature | 500 | 1237 | 1597 |

| | | | |
|---|---|---|---|
| Inorganic zinc high-build | 340 | 571 | 728 |
| Military exterior | 340 | 571 | 728 |
| Mist | 610 | 2235 | |
| Navigational aids | 550 | 1597 | |
| Nonskid | 340 | 571 | 728 |
| Nuclear | 420 | 841 | 1069 |
| Organic zinc | 360 | 630 | 802 |
| Pre-treatment wash primer | 780 | 11095 | |
| Repair and maintenance of thermoplastics | 550 | 1597 | |
| Rubber camouflage | 340 | 571 | 728 |
| Sealant for thermal spray aluminum | 610 | 2235 | |
| Special marking | 490 | 1178 | |
| Special interior | 340 | 571 | 728 |
| Tack coat | 610 | 2235 | |
| Undersea weapons systems | 340 | 571 | 728 |
| Weld-through precon primer | 650 | 2885 | |

[a] The limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in §63.785(c)(1), but only the limit expressed in units of g/l solids (nonvolatiles) shall be used for the compliance procedures described §63.785(c) (2) through (4).
[b] VOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in §63.785(c) (1) through (3).
[c] To convert from g/l to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.
[d] VOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.
[e] These limits apply during cold-weather time periods, as defined in §63.782. Cold-weather allowances are not given to coatings in categories that permit less than 40 percent volume solids (nonvolatiles). Such coatings are subject to the same limits regardless of the weather conditions.

**40 CFR §63.783 –** Compliance Procedures.

"(a) For each batch of coating that is received by an affected source, the owner or operator shall:

(1) Determine the coating category and the applicable VOHAP limit as specified in §63.783(a).
(2) Certify the as-supplied VOC content of the batch of coating. The owner or operator may use a certification supplied by the manufacturer for the batch, although the owner or operator retains liability should subsequent testing reveal a violation. If the owner or operator performs the certification testing, only one of the containers in which the batch of coating was received is required to be tested.

(b)(1) In lieu of testing each batch of coating, as applied, the owner or operator may determine compliance with VOHAP limit using any combination

of the procedures described in paragraphs (c)(1), (c)(2), (c)(3) and (c)(4) of this section. The procedure used for each coating shall be determined and documented prior to application.
(2) The results of any compliance demonstration conducted by the affected source or any regulatory agency using Method 24 shall take precedence over the results using the procedures in paragraph (c)(1), (c)(2), or (c)(3) of this section.
(3) The results of any compliance demonstration conducted by the affected source or any regulatory agency using an approved test method to determine VOHAP content shall take precedence over the results using the procedures in paragraph (c)(4) of this section."

"(c)(2) ***Coatings to which thinning solvent will be added-coating-by-coating compliance***. For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall comply as follows:
(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch as follows:

$R = [(Vs)(VOHAP\ limit)-mVOC]/Dth$ Eq. 1

where:
R = Maximum allowable thinning ratio for a given batch (L thinner/L coating as supplied);
$V_s$ = Volume fraction of solids in the batch as supplied (L solids/L coating as supplied);
VOHAP limit = Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);
$m_{VOC}$ = VOC content of the batch as supplied [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];
$D_{th}$ = Density of the thinner (g/L).

If $V_s$ is not supplied directly by the coating manufacturer, the owner or operator shall determine $V_s$ as follows:

$Vs = 1 – [m_{volatiles}/D_{avg}]$ Eq. 2

where:

$m_{volatiles}$ = Total volatiles in the batch, including VOC, water, and exempt compounds (g/L coating); and

$D_{avg}$ = Average density of volatiles in the batch (g/L).

The procedures specified in §63.786(d) may be used to determine the values of variables defined in this paragraph. In addition, the owner or operator may choose to construct nomographs, based on Equation 1 of this subpart, similar or identical to the one provided in appendix B of this subpart as a means of easily estimating the maximum allowable thinning ratio.
(ii) Prior to the first application of each batch, notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch of the coating by affixing a label to each container of coating or through another means described in the implementation plan required in §63.787(b).
(iii) By the 15th day of each calendar month, determine the volume of each batch of the coating used, as supplied, during the previous month.
(iv) By the 15th day of each calendar month, determine the total allowable volume of thinner for the coating used during the previous month as follows:

$$Vth = (RxVb)i + (Rcold \times Vb\text{-}cold)i \qquad \text{Eq. 3}$$

where:

$V_{th}$ = Total allowable volume of thinner for the previous month (L thinner);
$V_b$ = Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied);
$R_{cold}$ = Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied);
$V_{b\text{-}cold}$ = Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied);
I = Each batch of coating; and
N = Total number of batches of the coating.
(v) By the 15th day of each calendar month, determine the volume of thinner actually used with the coating during the previous month.
(vi) If the volume of thinner actually used with the coating [paragraph (c)(3)(v) of this section] is less than or equal to the total allowable volume of thinner for the coating [paragraph (c)(3)(iv) of this section], then compliance is demonstrated for the coating for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.
(3) ***Coatings to which the same thinning solvent will be added-group compliance***. For coatings to which the same thinning solvent (or other material) is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Designate a single thinner to be added to each coating during the month and "group" coatings according to their designated thinner.
(ii) Prior to the first application of each batch, calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating in the group using the equations in paragraph (c)(2) of this section.
(iii) Prior to the first application of each "batch," notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch in the group by affixing a label to each container of coating or through another means described in the implementation plan required in §63.787(b).
(iv) By the 15th day of each calendar month, determine the volume of each batch of the group used, as supplied, during the previous month.
(v) By the 15th day of each calendar month, determine the total allowable volume of thinner for the group for the previous month using Equation 3 of this subpart.
(vi) By the 15th day of each calendar month, determine the volume of thinner actually used with the group during the previous month.
(vii) If the volume of thinner actually used with the group [paragraph (c)(3)(vi) of this section] is less than or equal to the total allowable volume of thinner for the group [paragraph (c)(3)(v) of this section], then compliance is demonstrated for the group for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60." **[Reference: 40 CFR §63.785]**

**Compliance Demonstration**

**§63.786(a) and (c) –** Test Methods and procedures

"(a) For the compliance procedures described in §63.785(c) (1) through (c)(3), Method 24 of 40 CFR part 60, appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included. (c) A coating manufacturer or the owner of an affected source may use batch formulation data as a test method in lieu of Method 24 of 40 CFR Part 60, Appendix A to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively know relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon costing formulation data. Notwithstanding such

determination, in the event of conflicting results, Method 24 of 40 CFR Part 60, Appendix A shall take precedence."

The Permittee shall comply and follow the record-keeping procedures described in 40 CFR §63.788(b). The Permittee shall compile records on a monthly basis and maintain those records for a minimum of 5 years. The Permittee shall comply and follow the reporting requirements described in 40 CFR §63.788(c).

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**Emissions Unit Number(s): Boilers – EU 02**

**MDE Reg. No. 5-0497**

**Emission Point 1:** One (1) 65 MMBtu/hr (Keeler DS-55) natural gas /landfill gas /No. 2 fuel oil fired boiler. [Space heater]

**A. Control of Visible Emissions**

**COMAR 26.11.09.05A** – Fuel Burning Equipment.

"**(2)**Areas III and IV. In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.

**(3) Exceptions**. Section A(1) and (2) of this regulation do not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if:

(a) The visible emissions are not greater than 40 percent opacity; and
(b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period."

The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, **40 CFR 60, Subpart Dc**, which contains the following:

**§60.43c** – "(c) On and after the date on which the initial performance test is completed or required to be completed under Sec. 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction."

*Note: Compliance with the "No Visible Emissions" requirement of COMAR 26.11.09.05A(2) will be used to show compliance with this NSPS standard.*

**Compliance**

The Permittee shall: (1) Properly operate and maintain the boilers in a manner to prevent visible emissions; and (2) Verify no visible emissions when burning No. 2 fuel oil. The Permittee shall perform a visual observation for a 6-minute period once for each 168 hours that the boiler burns oil. **Note**: *[if No. 2 fuel oil is not burned in a year, then no visual observation is required*].

The Permittee shall perform the following, if emissions are visible: (1) Inspect combustion control system and boiler operations, (2) Perform all necessary adjustments and/or repairs to the boiler within 48 hours, so that visible emissions are eliminated; (3) Document in writing the results of the inspections, adjustments and/or repairs to the boiler; and (4) After 48 hours, if the required adjustments and/or repairs had not eliminated the visible emissions, perform Method 9 observations once daily for 18 minutes until corrective actions have eliminated the visible emissions.

The Permittee shall: (1) Maintain an operation manual and prevention maintenance plan on site; (2) Maintain a record of the maintenance preformed that relates to combustion performance; (3) Maintain a log of visible emissions observations performed and make it available to the Department's representative upon request; (4) Maintain a record of the hours that No. 2 fuel oil is burned. **[Reference: COMAR 26.11.03.06C**]. The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations".

**B. Control of Sulfur Oxides**

**COMAR 26.11.09.07A (2)** – Sulfur Content Limitations for Fuel.

"A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: In Areas III and IV: (b) Distillate fuel oils, 0.3 percent."

**Compliance**

The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the limitation on the sulfur content of the fuel oil. The Permittee shall retain annual fuel supplier certifications stating that the fuel oil is in compliance with this regulation must be maintained for at least 5 years. **[Reference: COMAR 26.11.03.06C**]. The Permittee shall report annual fuel

supplier certification to the Department upon request. **[Reference: COMAR 26.11.09.07C]**

**C. Control of Nitrogen Oxides**

**COMAR 26.11.09.08B(5) –** Operator Training.

(a) For purposes of this regulation, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation.

(b) The operator training course sponsored by the Department shall include an in-house training course that is approved by the Department."

**COMAR 26.11.09.08F –** Requirements for Space Heaters.

"(1) A person who owns or operates a space heater as defined in Regulation .01B of this chapter shall:

(a) Submit to the Department a list of each affected installation on the premises and the types of fuel used in each installation;

(b) Develop an operating and maintenance plan to minimize $NO_x$ emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience;

(c) Implement the operating and maintenance plan and maintain the plan at the premises for review upon request by the Department;

(d) Require installation operators to attend in-State operator training programs once every 3 years on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

(e) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request.

(2) A person who owns or operates an installation that no longer qualifies as a space heater shall inform the Department not later than 60 days after the date when the fuel-burning equipment did not qualify, and shall meet the applicable fuel-burning equipment RACT requirement in this regulation."

**Compliance**

The Permittee shall develop and maintain an operating and maintenance plan to minimize NOx. **[Reference: COMAR 26.11.09.08F(1)(b)]** The Permittee shall maintain: (1) Records of maintenance performed that relates to combustion performance in keeping with the requirements of an operations and maintenance plan. **[Reference: COMAR 26.11.09.08F (1)(c)]** (2) Record of training program attendance for each operator. **[Reference: COMAR 26.11.09.08F (1)(e)]** (3) An operations manual and preventive maintenance plan. **[Reference: COMAR**

**26.11.09.08F (1) (b)]** (4) Records of fuel use that demonstrates that the boiler meets the definition of a space heater. **[Reference: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C]** The Permittee shall submit a record of training program attendance for each operator to the Department upon request. **[Reference: COMAR 26.11.09.08F(1)(e)]**

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**Emissions Unit Number(s): Boilers – EU 03**

**[Reg. No. 4-0824]**: One (1) Vapor Power International Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input.

**[Reg. No. 4-0825]**: One (1) Vapor Power International Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input.

**A. Control of Visible Emissions**

**COMAR 26.11.09.05A** – Fuel Burning Equipment.

"**(2)**Areas III and IV. In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.

**(3) Exceptions**. Section A(1) and (2) of this regulation do not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if:

(c) The visible emissions are not greater than 40 percent opacity; and

(d) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period."

The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, **40 CFR 60, Subpart Dc**, which contains the following:

**§60.43c** – "(c) On and after the date on which the initial performance test is completed or required to be completed under Sec. 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute

average), except for one 6-minute period per hour of not more than 27 percent opacity.
(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction."

*Note: Compliance with the "No Visible Emissions" requirement of COMAR 26.11.09.05A(2) will be used to show compliance with this NSPS standard.*

**Compliance**

The Permittee shall: (1) Properly operate and maintain the boilers in a manner to prevent visible emissions; and (2) Verify no visible emissions when burning No. 2 fuel oil. The Permittee shall perform a visual observation for a 6-minute period once for each 168 hours that the boiler burns oil. **Note**: *[if No. 2 fuel oil is not burned in a year, then no visual observation is required*].
The Permittee shall perform the following, if emissions are visible: (1) Inspect combustion control system and boiler operations, (2) Perform all necessary adjustments and/or repairs to the boiler within 48 hours, so that visible emissions are eliminated; (3) Document in writing the results of the inspections, adjustments and/or repairs to the boiler; and (4) After 48 hours, if the required adjustments and/or repairs had not eliminated the visible emissions, perform Method 9 observations once daily for 18 minutes until corrective actions have eliminated the visible emissions.
The Permittee shall: (1) Maintain an operation manual and prevention maintenance plan on site; (2) Maintain a record of the maintenance preformed that relates to combustion performance; (3) Maintain a log of visible emissions observations performed and make it available to the Department's representative upon request; (4) Maintain a record of the hours that No. 2 fuel oil is burned. **[Reference: COMAR 26.11.03.06C]** The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations."

**B. Control of Sulfur Oxides**

**COMAR 26.11.09.07A (2)** – Sulfur Content Limitations for Fuel.
"A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: In Areas III and IV: (b) Distillate fuel oils, 0.3 percent."

The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, 40 CFR 60, Subpart Dc, which contains the following:

**§60.42c** – Standard for sulfur dioxide
"(**d)** On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 215 ng/J (0.50 lb/million Btu) heat input; or an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater that 0.5 percent weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph."

*Note: The monitoring, record keeping, and reporting requirements under NSPS Subpart Dc will be used to demonstrate compliance with COMAR 26.11.09.07A and the NSPS sulfur in fuel standard.*

**Compliance**

**§60.44c(h)** - Compliance and performance test methods and procedures for sulfur dioxide. "For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable. **§60.46c** – Emission monitoring for sulfur dioxide. "(**e)** The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, as described under §60.48c(f)(1), (2) or (3), as applicable."

**§60.48c** – Reporting and record keeping requirements.

"(**e**)(**11**) If fuel supplier certification is used to demonstrate compliance, **records** of fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2) or (3) of this section as applicable. In addition to records of fuel supplier certifications, **the report** shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period."
"(**f**) Fuel supplier certification shall include the following information:

(1) For distillate oil:
(i) The name of the oil supplier; and
(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c."

**§60.48c** – Reporting and record keeping requirements.

"(**j**) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period."

**C. Control of Nitrogen Oxides**

**COMAR 26.11.09.08B(5) –** Operator Training.

(a) For purposes of this regulation, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation.

(b) The operator training course sponsored by the Department shall include an in-house training course that is approved by the Department."

**COMAR 26.11.09.08F –** Requirements for Space Heaters.

"(1) A person who owns or operates a space heater as defined in Regulation .01B of this chapter shall:

(a) Submit to the Department a list of each affected installation on the premises and the types of fuel used in each installation;

(b) Develop an operating and maintenance plan to minimize $NO_x$ emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience;

(c) Implement the operating and maintenance plan and maintain the plan at the premises for review upon request by the Department;

(d) Require installation operators to attend in-State operator training programs once every 3 years on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

(e) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request.

(2) A person who owns or operates an installation that no longer qualifies as a space heater shall inform the Department not later than 60 days after the date when the fuel-burning equipment did not qualify, and shall meet the applicable fuel-burning equipment RACT requirement in this regulation."

**Compliance**

The Permittee shall develop and maintain an operating and maintenance plan to minimize $NO_x$. **[Reference: COMAR 26.11.09.08F(1)(b)**] The Permittee shall maintain: (1) Records of maintenance performed that relates to combustion performance in keeping with the requirements of an operations and maintenance plan. **[Reference: COMAR 26.11.09.08F (1) (c)].** (2) Record of training program attendance for each operator**. [Reference: COMAR 26.11.09.08F (1) (e)].** (3) An

operations manual and preventive maintenance plan. **[Reference: COMAR 26.11.09.08F (1) (b)].** (4) Records of fuel use that demonstrates that the boiler meets the definition of a space heater**. [Reference: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C]**

The Permittee shall submit: a record of training program attendance for each operator to the Department upon request. **[Reference: COMAR 26.11.09.08F(1)(e)]**

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**Emissions Unit Number(s): Landfill Gas/NG Cogeneration Plant – EU 04**
**MDE Reg. Nos. 9-0889, 9-0891, 9-0892 & 9-1185**

Four (4) 1,057 kW (1,468 Hp) GE Jenbacher 320 dual (landfill & natural gas) fired, lean-burn, electric-generating engines, equipped with heat recovery steam generators (HRSG).

**Note**: For the purpose of this permit, a landfill gas (LFG) fired engine is defined as an engine that fires LFG at 10 percent or more of the gross heat input on an annual basis.

**Applicable Standards and Limits**

**A. Control of Visible Emissions**
**COMAR 26.11.09.05E –** Visible Emissions Limits for Stationary Internal Combustion Engine Powered Equipment.

"(1) Definitions. For the purpose of this section:

(a) "Idle" means the condition during which the engine is not performing the useful net work that enables the piece of equipment to accomplish its designated purpose.

(b) "Internal combustion engine" (hereafter "engine") means all engines except those used for propulsion of ships or vehicles licensed to operate upon the public highway within the State, or engines employed solely for agricultural and recreational purposes unless they are an integral part of a stationary installation.

(2) Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(3) Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(4) Exceptions.

(a) Section E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(b) Section E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
(i) Engines that are idled continuously when not in service: 30 minutes;
(ii) All other engines: 15 minutes.

(c) Section E(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics."

**COMAR 26.11.09.05E –** Visible Emissions Limits for Stationary Internal Combustion Engine Powered Equipment.
"(1) Definitions. For the purpose of this section:

(a) "Idle" means the condition during which the engine is not performing the useful net work that enables the piece of equipment to accomplish its designated purpose.

(b) "Internal combustion engine" (hereafter "engine") means all engines except those used for propulsion of ships or vehicles licensed to operate upon the public highway within the State, or engines employed solely for agricultural and recreational purposes unless they are an integral part of a stationary installation.

(2) Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(3) Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(4) Exceptions.

(a) Section E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(b) Section E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
(i) Engines that are idled continuously when not in service: 30 minutes;
(ii) All other engines: 15 minutes.

(c) Section E(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics."

**Compliance**
The Permittee shall properly operate and maintain the I/C engines in a manner to prevent visible emissions. The Permittee shall maintain an operations manual and preventive maintenance plan on site. The Permittee shall maintain a log of maintenance performed that relates to the engine performance.
**[Reference: COMAR 26.11.03.06C & 40 CFR § 60.4245]**

**Note:** IC engines firing natural gas or equivalent typically do not require monitoring for visible emissions (VE) because they normally will not have any VE emissions. This is particularly so when these types of engines are maintained and operated properly.

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**B. Control of Nitrogen Oxides**

**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines >25 HP [Except gasoline and rich burn LPG engines]:

**NOx = 3.0 g/Hp-hr/220 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr / 160 ppmvd at 15% $O_2$ (Natural Gas)**

The following emission limitations shall apply for MDE Reg. No. 9-1185, only:

**NOx: 2.0 g/Hp-hr/150 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr/82 ppmvd at 15% $O_2$ (Natural Gas)**

**Compliance**

The Permittee shall:

(1) Conduct an initial performance test to demonstrate compliance with the emission standards specified in Table 1 to this subpart and according to the requirements specified in Sec.60.4244, as applicable. If you are an owner or operator of a stationary SI internal combustion engine that is greater than 500 HP, you must also conduct subsequent performance tests *every 3 years or 8,760 hours of operation, whichever comes first.* **[Reference: 40 CFR § 60.4243 (b)(2)(ii) & § 60.4244]**

**Note**: For specific test measures and procedures for stationary SI internal combustion engines, see 40 CFR § 60.4244, condition IV-6, 6.2 B. (3) of the Part 70 operating permit.

(2) Maintain the records and the results of all emissions testing performed on the landfill gas-fired electric-generating engines as required under 40 CFR § 60.4243 (c)(2). **[Reference: 40 CFR § 60.4243 (b)(2)(ii)]**

(3) **§ 60.4245 - What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?**

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

"(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards."

"(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

"(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed."

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]
**[Reference: 40 CFR § 60.4245] NOTE: This requirement has been fulfilled.**

(4) Maintain an operations manual and maintenance plan on site.
**[Reference: COMAR 26.11.03.06C]**

**C. <u>Control of Carbon Monoxide</u>**
**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines > 25 HP [Except gasoline and rich burn LPG engines]:

**CO = 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 4.0 g/Hp-hr / 540 ppmvd at 15% $O_2$ (Natural Gas)**

The following emission limitations shall apply for MDE Reg. No. 9-1185, only:
**CO: 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr/270 ppmvd at 15% $O_2$ (Natural Gas)**

**Compliance**
**{See Compliance requirements for Control of Nitrogen Oxides, above.}**
The Permittee must report all violations of excess emissions and submit maintenance records upon request. **[Reference: COMAR 26.11.03.06C]**

**D. Control of VOC (equivalent to NMHC)**

**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines >25 HP [Except gasoline and rich burn LPG engines]:

**VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr / 86 ppmvd at 15% $O_2$ (Natural Gas)**

The following emission limitations shall apply for MDE Reg. No. 9-1185, only:
**VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 0.7 g/Hp-hr / 60 ppmvd at 15% $O_2$ (Natural Gas)**

**[Reference: 40 CFR 60 Subpart JJJJ, Section 60.4233(e)]**

**Compliance**
**{See Compliance requirements for Control of Nitrogen Oxides, above.}**
The Permittee must report all violations of excess emissions and submit maintenance records upon request. **[Reference: COMAR 26.11.03.06C]**

**E. Operational Limitation (NOx Synthetic Minor)**

In order to exempt the four (4) 1,057 kW, GE Jenbacher 320 engine/generators generators from the requirements of COMAR 26.11.17 - Requirements for Major New Sources and Modifications, and prevent the engine sets from operating as a “Major Modification” with a “significant net emissions increase of VOC or NOx as defined under COMAR 26.11.17.01B, the Permittee shall limit the NOx and VOC emissions from the four (4) landfill-gas fired generator sets to less than 25 tons per year, for any 12-month

consecutive period. **[Reference: PTC 003-0316-9-0889, 9-0891, 9-0892 & 9-1185 – Part D Operating Conditions]**

**Compliance**

In order to demonstrate compliance with the emissions limitations requirement for exemption from NSR, the Permittee shall calculate and record the emissions from the four-(4) landfill-gas fired, 1,057 kW, GE Jenbacher 320 engine/generators generators, for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly, within the first 15 days of each following month. The results of the calculations and logs shall be maintained on site and made available to the Department upon request.

The Permittee shall submit along with the required semi-annual compliance reports (Ref: Section III, 4d.) a summary report verifying that the Synthetic Minor Limitation for NOx was not exceeded for the IC engine generator sets. **[Reference: PTC 003-0316-9-0889, 9-0891, 9-0892 & 9-1185 – Part D Operating Conditions]**

**F. Control of Hazardous Air Pollutants – 40 CFR 63, Subpart ZZZZ**

§ 63.6590 What parts of my plant does this subpart cover?

"This subpart applies to each affected source.
(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.
(2) New stationary RICE.
(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(c) Stationary RICE subject to Regulations under 40 CFR, Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR, Part 60, Subpart IIII, for compression ignition engines or 40 CFR, Part 60, Subpart JJJJ, for spark ignition engines. **No further requirements apply for such engines under this part**.

(1) A new or reconstructed stationary RICE located at an area source."

**[Amendment(s) published August 20, 2010, in 75 FR 51588; Effective Date(s): October 19, 2010]**

**Compliance**

Compliance with the requirements of 40 CFR part 60 subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart ZZZZ.
**{See Compliance requirements for Control of Nitrogen Oxides, above.}**

**Test Results Landfill Gas Fired Engine/ Generators**

Engine #1, 3 and 4 were stack tested on January 17, 2020 and initial testing of Engine #2 was conducted on January 17, 2020 for the four (4)Engine #1, 3 and 4 were stack tested on January 17, 2020, and initial testing of Engine #2 was conducted on January 17, 2020 for the four (4) Jenbacher 302 generator/engines sets at the US Coast Guard yard in Curtis Bay, MD. The tests were required by NSPS (40 CFR 60 Subpart JJJJ). The test report was received electronically on March 11, 2020. Testing was performed at 99.9% load or greater on all engines. Engines capacity = 1063 kW each)

Summary of Results for **Engines # 1, 3**, and **4**

| **Maximum Allowable Emission (NG)** | **Maximum Allowable Emission (LFG)** | **Engine # 1** | **Engine # 3** | **Engine # 4** |
|---|---|---|---|---|
| **NOx: 160 ppmvd at 15% $O_2$** | **NOx: 220 ppmvd at 15% $O_2$** | 104.0 | 89.5 | 43.7 |
| **CO: 540 ppmvd at 15% $O_2$** | **CO: 610 ppmvd at 15% $O_2$** | 262.9 | 347.2 | 253.5 |
| **VOC (NMHC):86 ppmvd at 15% $O_2$** | **VOC (NMHC):80 ppmvd at 15% $O_2$** | 22.2 | 40.0 | 24.8 |

Summary of Results for **Engine # 2, MDE Reg. No. 9-1185**

| **Maximum Allowable Emission (NG)** | **Maximum Allowable Emission (LFG)** | **Engine # 2 MDE Reg. No. 9-1185** |
|---|---|---|
| **NOx: 82 ppmvd at 15% $O_2$** | **NOx: 150 ppmvd at 15% $O_2$** | 68.0 |
| **CO: 270 ppmvd at 15% $O_2$** | **CO: 610 ppmvd at 15% $O_2$** | 266.6 |
| **VOC (NMHC): 60 ppmvd at 15% $O_2$** | **VOC (NMHC):80 ppmvd at 15% $O_2$** | 52.4 |

## COMPLIANCE SCHEDULE

US Coast Guard Yard is currently in compliance with all applicable air quality regulations.

## TITLE IV – ACID RAIN

Not Applicable

## TITLE VI – OZONE DEPLETING SUBSTANCES

US Coast Guard Yard is not subject to Title VI requirements.

## SECTION 112(r) – ACCIDENTAL RELEASE

US Coast Guard Yard is not subject to the requirements of Section 112(r).

## PERMIT SHIELD

The US Coast Guard Yard facility requested that a permit shield be expressly included in the Permittee's Part 70 permit. Permit shields are granted on an emission unit by emission unit basis. If an emission unit is covered by a permit shield, a permit shield statement will follow the emission unit table in Section IV - Plant Specific Conditions of the permit. In this case, a permit shield was granted for each emission unit covered by the permit.

## INSIGNIFICANT ACTIVITIES

This section provides a list of insignificant emissions units that were reported in the Title V permit application. The applicable Clean Air Act requirements, if any, are listed below the insignificant activity.

(1) No. 9 Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour;

**[For Areas III and IV]**

The fuel burning equipment are subject to the following requirements:

COMAR 26.11.09.05A(2), which establishes that the Permittee may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.

Exceptions: COMAR 26.11.09.05A(2) does not apply to emissions during load changing, soot blowing, start-up, or adjustments or occasional cleaning of control equipment if:

(a) The visible emissions are not greater than 40 percent opacity; and

(b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period.

**[For Distillate Fuel Oil]**

COMAR 26.11.09.07 A(2)(b), which establishes that the Permittee may not burn, sell, or make available for sale any distillate fuel with a sulfur content by weight in excess of 0.3 percent.

(2) No. 13 Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

The engines are subject to the following requirements:

(A) COMAR 26.11.09.05E(2), Emissions During Idle Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(B) COMAR 26.11.09.05E(3), Emissions During Operating Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(C) Exceptions:

(i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(ii) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(a) Engines that are idled continuously when not in service: 30 minutes
(b) all other engines: 15 minutes.

(iii) COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair or testing is being performed by qualified mechanics.

(D) COMAR 26.11.36.03A(1), which establishes that the Permittee may not operate an emergency generator except for emergencies, testing and maintenance purposes.

(E) COMAR 26.11.36.03A(5), which establishes that the Permittee may not operate an emergency generator for testing and engine maintenance purposes between 12:01 a.m. and 2:00 p.m. on any day on which the Department forecasts that the air quality will be a code orange, code red, or code purple unless the engine fails a test and engine maintenance and a re-test are necessary.

(3) ✓ Space heaters utilizing direct heat transfer and used solely for comfort heat;

(4) ✓ Equipment for drilling, carving, cutting, routing, turning, sawing, planing, spindle sanding, or disc sanding or wood or wood products;

(5) ✓ Equipment for washing or drying products fabricated from metal or glass, provided that no NOV is used in the process and that no oil or solid fuel is burned;

(6) ✓ Brazing, soldering, or welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals and not directly related to plant maintenance, upkeep and repair or maintenance shop activities;

(7) Containers, reservoirs, or tanks used exclusively for:

(a) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas;

(b) No. 35 Storage of lubricating oils;

(c) No. 16 Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel;

(d) No. 2 Storage of motor vehicle gasoline and having individual tank capacities of 2,000 gallons (7.6 cubic meters) or less;

(e) No. varies The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;

*No storage of these products in drums or tanks, however the facility does store products such as thinners in smaller (typically 1-5 gallon) containers*

(8) ✓ Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;

(9) ✓ First aid and emergency medical care provided at the facility, including related activities such as sterilization and medicine preparation used in support of a manufacturing or production process;

(10) ✓ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

(11) ✓ Comfort air conditioning subject to requirements of Title VI of the Clean Air Act;

(12) ✓ Non-contact water (i.e., water that has not been in direct contact with process fluids) cooling towers except as regulated under Section 112 of the Clean Air Act;

(13) ✓ Natural draft hoods or natural draft ventilators that exhaust air pollutants into the ambient air from manufacturing/industrial or commercial processes;

(14) any other emissions unit, not listed in this section, with a potential to emit less than the "de minimus" levels listed in COMAR 26.11.02.10X (list and describe units):

No. 1 Degreasing operation using heated KOH, stored in 3,000 gallon AST in Building 5.

No. 1 Spray can painting operations in various locations at the facility, including, but not limited to: Buildings 40B and 66.

No. 1 Abrasive blasting and surface preparation operations in various locations at the facility. Locations include, but are not limited to: Buildings 5, 5A, 8, 8A, 11, 34, 35, 40, 40B, 42, 58, and 78, as well as alongside piers and bulkheads, vessels in dry dock, ship-lift, and vessels hauled-out on land.

No. 1 Equipment/part painting operations in Building 11.

(15) any other emissions unit at the facility which is not subject to an applicable requirement of the Clean Air Act (list and describe):

No. 1 Marine engine/dynamometer test cell in Building 91

No. 2 Refrigeration recovery operation in Building 8, and Building 12

No. ✓ Refrigeration recovery operation from ships reconditioned or serviced

No. ✓ Mobile Sources (including, but not limited to): Passenger vehicles, Fleet vehicles, Rail Cranes, Non-road vehicles, Marine vessels

## STATE ONLY ENFORCEABLE REQUIREMENTS

This section of the permit contains state-only enforceable requirements. The requirements in this section will not be enforced by the U.S. Environmental Protection Agency. The requirements in this section are not subject to COMAR 26.11.03 10 - Public Petitions for Review to EPA Regarding Part 70 Permits.

1. Applicable Regulations:

   **COMAR 26.11.06.08 –** Nuisance**. "**An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution."

   **COMAR 26.11.06.09** – Odors. "A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that nuisance or air pollution is created."

   **Toxic Requirements**
   **COMAR 26.11.15.05,** which requires the installation and operation of T-BACT for new installations or sources discharging a toxic air pollutant to the atmosphere.

   **COMAR 26.11.15.06**, states that new sources or installations must comply with the allowable emissions of toxic air pollutants. Existing sources of installation must demonstrate compliance with the list of toxic air pollutants for existing sources.

2. Record Keeping and Reporting:

   The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. The analysis shall include either:

   (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

   (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.

Lawrence J. Hogan
Governor

Ben Grumbles
Secretary

Air and Radiation Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

[ ] Construction Permit

[X] DRAFT Part 70 Operating Permit

| | | | |
|---|---|---|---|
| PERMIT NO. | 24-003-0316 | DATE ISSUED | December 1, 2020 |
| PERMIT FEE | To be paid in accordance with COMAR 26.11.02.19B(b) | EXPIRATION DATE | November 30, 2025 |

LEGAL OWNER & ADDRESS

U.S. Coast Yard – Curtis Bay
2401 Hawkins Point Road, MS 10
Curtis Bay, Maryland, 21226-1797
Attn: LCDR John Adams, PE
Facility Engineer

SITE

U.S. Coast Yard – Curtis Bay
2401 Hawkins Point Road, MS 10
Curtis Bay, Maryland, 21226-1797
Anne Arundel County
AI#1792

SOURCE DESCRIPTION

A ship fabricating, repair, and assembling facility.
.

This source is subject to the conditions described on the attached pages.



Program Manager

Director, Air and Radiation Administration

**US COAST GUARD YARD (AI# 1792)**
**2401 HAWKINS POINT ROAD**
**BALTIMORE, MARYLAND 21226**
**DRAFT PART 70 OPERATING PERMIT NO. 24-003-00316**

## SECTION I SOURCE IDENTIFICATION

### 1. DESCRIPTION OF FACILITY

The United States Coast Guard Yard at Curtis Bay, Maryland, under the U.S. Department of Homeland Security, is responsible for refurbishing, repairing, servicing, fabricating, and assembling various Coast Guard, Federal, State, and Local Government marine vessels, equipment, and aids to navigation (buoys). These operations include various sources of air emissions at the 113-acre facility. Primary air emission sources include one (1) 65 MMBtu/hr triple-fuel (LFG/NG/No 2)-fired boiler, two (2) 15 MMBtu/hr dual fuel-fired boilers, four (4) dual-fired (landfill and natural gas) internal combustion engines, as well as engine painting, surface coating, and fiberglass fabrication operations. Other smaller sources of air emissions include small boilers, storage tanks, parts degreasing, small painting operations, abrasive blasting, and emergency power generators.

The primary SIC codes for the facility are 9711 (national security), 3732 (ship building and repairing), and 3731 (boat building and repairing).

### 2. FACILITY INVENTORY LIST

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| **Painting and Coating Operations** | | | | |
| EU01 | 6-0902 | Engine Painting and Surface Coating | Engine Painting and Surface Coating operations in multiple locations, including, but not limited to Buildings 90, 32, 40, 78 (includes three paint booth process heaters), and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations | Jan 1943 with some Operations consolidated Mar 2004 |

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| EU01 | 6-0903 | Fiberglass Application | Fiberglass Application operations in Bldg 32 | Dec 1978; moved Mar 2004 |
| **Boilers** | | | | |
| EU02 | 5-0497 | Boiler | One (1) Keeler DS-55 natural gas/landfill gas/No. 2 fuel oil fired boiler rated at 65 MMBtu/hr heat input. [Space heater] | Apr 1981, modified in 2009 |
| EU03 | 4-0824 | Boiler | One (1) Vapor Power International Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input. [Space heater] | Jul 2004 |
| EU03 | 4-0825 | Boiler | One (1) Vapor Power International Steam Generator, natural gas/No. 2 fuel oil fired rated at 15 MMBtu/hr heat input. [Space heater] | Jul 2004 |
| **Landfill Gas Cogeneration Plant** | | | | |
| EU04 | 9-0889 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |

| Emission Unit Number | Registration Number | Emission Unit Name | Emissions Unit Description | Date of Installation |
|---|---|---|---|---|
| | | | | |
| EU04 | 9-0891 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |
| EU04 | 9-0892 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | April 2009 |
| EU04 | 9-1185 | I/C Engine Generator | 1,057-kW (1,468-hp) GE Jenbacher 320 dual (landfill & natural gas) fired electric-generating engines, equipped with heat recovery steam generators (HRSG) | October 2019 |

## SECTION II GENERAL CONDITIONS

### 1. DEFINITIONS

**[COMAR 26.11.01.01] and [COMAR 26.11.02.01]**

The words or terms in this Part 70 permit shall have the meanings established under COMAR 26.11.01 and .02 unless otherwise stated in this permit.

### 2. ACRONYMS

| | |
|---|---|
| ARMA | Air and Radiation Management Administration |
| BACT | Best Available Control Technology |
| Btu | British thermal unit |
| CAA | Clean Air Act |
| CAM | Compliance Assurance Monitoring |
| CEM | Continuous Emissions Monitor |
| CFR | Code of Federal Regulations |
| CO | Carbon Monoxide |
| COMAR | Code of Maryland Regulations |
| EPA | United States Environmental Protection Agency |
| FR | Federal Register |
| gr | grains |
| HAP | Hazardous Air Pollutant |
| MACT | Maximum Achievable Control Technology |
| MDE | Maryland Department of the Environment |
| MVAC | Motor Vehicle Air Conditioner |
| NESHAPS | National Emission Standards for Hazardous Air Pollutants |
| $NO_x$ | Nitrogen Oxides |
| NSPS | New Source Performance Standards |
| NSR | New Source Review |
| OTR | Ozone Transport Region |
| PM | Particulate Matter |
| PM10 | Particulate Matter with Nominal Aerodynamic Diameter of 10 micrometers or less |
| ppm | parts per million |
| ppb | parts per billion |
| PSD | Prevention of Significant Deterioration |
| PTC | Permit to construct |
| PTO | Permit to operate (State) |
| SIC | Standard Industrial Classification |
| $SO_2$ | Sulfur Dioxide |

| | |
|---|---|
| TAP | Toxic Air Pollutant |
| tpy | tons per year |
| VE | Visible Emissions |
| VOC | Volatile Organic Compounds |

## 3. EFFECTIVE DATE

The effective date of the conditions in this Part 70 permit is the date of permit issuance, unless otherwise stated in the permit.

## 4. PERMIT EXPIRATION

**[COMAR 26.11.03.13B(2)]**

Upon expiration of this permit, the terms of the permit will automatically continue to remain in effect until a new Part 70 permit is issued for this facility provided that the Permittee has submitted a timely and complete application and has paid applicable fees under COMAR 26.11.02.16.

Otherwise, upon expiration of this permit the right of the Permittee to operate this facility is terminated.

## 5. PERMIT RENEWAL

**[COMAR 26.11.03.02B(3)] and [COMAR 26.11.03.02E]**

The Permittee shall submit to the Department a completed application for renewal of this Part 70 permit at least 12 months before the expiration of the permit. Upon submitting a completed application, the Permittee may continue to operate this facility pending final action by the Department on the renewal.

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall submit such supplementary facts or corrected information no later than 10 days after becoming aware that this occurred. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after the date a completed application was submitted, but prior to the release of a draft permit. This information shall be submitted to the Department no later than 20 days after a new requirement has been adopted.

## 6. CONFIDENTIAL INFORMATION

**[COMAR 26.11.02.02G]**

In accordance with the provisions of the State Government Article, Sec. 10-611 et seq., Annotated Code of Maryland, all information submitted in an application shall be considered part of the public record and available for inspection and copying, unless the Permittee claims that the information is confidential when it is submitted to the Department. At the time of the request for inspection or copying, the Department will make a determination with regard to the confidentiality of the information. The Permittee, when requesting confidentiality, shall identify the information in a manner specified by the Department and, when requested by the Department, promptly provide specific reasons supporting the claim of confidentiality. Information submitted to the Department without a request that the information be deemed confidential may be made available to the public. Subject to approval of the Department, the Permittee may provide a summary of confidential information that is suitable for public review. The content of this Part 70 permit is not subject to confidential treatment.

## 7. PERMIT ACTIONS

**[COMAR 26.11.03.06E(3)] and [COMAR 26.11.03.20(A)]**

This Part 70 permit may be revoked or reopened and revised for cause. The filing of an application by the Permittee for a permit revision or renewal; or a notification of termination, planned changes or anticipated noncompliance by the facility, does not stay a term or condition of this permit.

The Department shall reopen and revise, or revoke the Permittee's Part 70 permit under the following circumstances:

a. Additional requirements of the Clean Air Act become applicable to this facility and the remaining permit term is 3 years or more;

b. The Department or the EPA determines that this Part 70 permit contains a material mistake, or is based on false or inaccurate information supplied by or on behalf of the Permittee;

c. The Department or the EPA determines that this Part 70 permit must be revised or revoked to assure compliance with applicable requirements of the Clean Air Act; or

d. Additional requirements become applicable to an affected source under the Federal Acid Rain Program.

## 8. PERMIT AVAILABILITY

**[COMAR 26.11.02.13G]**

The Permittee shall maintain this Part 70 permit in the vicinity of the facility for which it was issued, unless it is not practical to do so, and make this permit immediately available to officials of the Department upon request.

## 9. REOPENING THE PART 70 PERMIT FOR CAUSE BY THE EPA

**[COMAR 26.11.03.20B]**

The EPA may terminate, modify, or revoke and reissue a permit for cause as prescribed in 40 CFR §70.7(g)

## 10. TRANSFER OF PERMIT

**[COMAR 26.11.02.02E]**

The Permittee shall not transfer this Part 70 permit except as provided in COMAR 26.11.03.15.

## 11. REVISION OF PART 70 PERMITS – GENERAL CONDITIONS

**[COMAR 26.11.03.14] and [COMAR 26.11.03.06A(8)]**

a. The Permittee shall submit an application to the Department to revise this Part 70 permit when required under COMAR 26.11.03.15 -.17.

b. When applying for a revision to a Part 70 permit, the Permittee shall comply with the requirements of COMAR 26.11.03.02 and .03 except that the application for a revision need include only information listed that is related to the proposed change to the source and revision to the permit. This information shall be sufficient to evaluate the proposed change and to determine whether it will comply with all applicable requirements of the Clean Air Act.

c. The Permittee may not change any provision of a compliance plan or schedule in a Part 70 permit as an administrative permit amendment or as a minor permit modification unless the change has been approved by the Department in writing.

d. A permit revision is not required for a change that is provided for in this permit relating to approved economic incentives, marketable permits, emissions trading, and other similar programs.

## 12. SIGNIFICANT PART 70 OPERATING PERMIT MODIFICATIONS

**[COMAR 26.11.03.17]**

The Permittee may apply to the Department to make a significant modification to its Part 70 Permit as provided in COMAR 26.11.03.17 and in accordance with the following conditions:

a. A significant modification is a revision to the federally enforceable provisions in the permit that does not qualify as an administrative permit amendment under COMAR 26.11.03.15 or a minor permit modification as defined under COMAR 26.11.03.16.

b. This permit does not preclude the Permittee from making changes, consistent with the provisions of COMAR 26.11.03, that would make the permit or particular terms and conditions of the permit irrelevant, such as by shutting down or reducing the level of operation of a source or of an emissions unit within the source. Air pollution control equipment shall not be shut down or its level of operation reduced if doing so would violate any term of this permit.

c. Significant permit modifications are subject to all requirements of COMAR 26.11.03 as they apply to permit issuance and renewal, including the requirements for applications, public participation, and review by affected states and EPA, except:

(1) An application need include only information pertaining to the proposed change to the source and modification of this permit, including a description of the change and modification, and any new applicable requirements of the Clean Air Act that will apply if the change occurs;

(2) Public participation, and review by affected states and EPA, is limited to only the application and those federally enforceable terms and conditions of the Part 70 permit that are affected by the significant permit modification.

d. As provided in COMAR 26.11.03.15B(5), an administrative permit amendment may be used to make a change that would otherwise require a significant permit modification if procedures for enhanced preconstruction review of the change are followed that satisfy the requirements of 40 CFR 70.7(d)(1)(v).

e. Before making a change that qualifies as a significant permit modification, the Permittee shall obtain all permits-to-construct and approvals required by COMAR 26.11.02.

f. The Permittee shall not make a significant permit modification that results in a violation of any applicable requirement of the Clean Air Act.

g. The permit shield in COMAR 26.11.03.23 applies to a final significant permit modification that has been issued by the Department, to the extent applicable under COMAR 26.11.03.23.

## 13. MINOR PERMIT MODIFICATIONS

**[COMAR 26.11.03.16]**

The Permittee may apply to the Department to make a minor modification to the federally enforceable provisions of this Part 70 permit as provided in COMAR 26.11.03.16 and in accordance with the following conditions:

a. A minor permit modification is a Part 70 permit revision that:

(1) Does not result in a violation of any applicable requirement of the Clean Air Act;

(2) Does not significantly revise existing federally enforceable monitoring, including test methods, reporting, record keeping, or compliance certification requirements except by:

(a) Adding new requirements,

(b) Eliminating the requirements if they are rendered meaningless because the emissions to which the requirements apply will no longer occur, or

(c) Changing from one approved test method for a pollutant and source category to another;

(3) Does not require or modify a:

(a) Case-by-case determination of a federally enforceable emissions standard,

(b) Source specific determination for temporary sources of ambient impacts, or

(c) Visibility or increment analysis;

(4) Does not seek to establish or modify a federally enforceable permit term or condition for which there is no corresponding underlying applicable requirement of the Clean Air Act, but that the Permittee has assumed to avoid an applicable requirement to which the source would otherwise be subject, including:

(a) A federally enforceable emissions standard applied to the source pursuant to COMAR 26.11.02.03 to avoid classification as a Title I modification; and

(b) An alternative emissions standard applied to an emissions unit pursuant to regulations promulgated under Section 112(i)(5) of the Clean Air Act

(5) Is not a Title I modification; and

(6) Is not required under COMAR 26.11.03.17 to be processed as a significant modification to this Part 70 permit.

b. Application for a Minor Permit Modification

The Permittee shall submit to the Department an application for a minor permit modification that satisfies the requirements of COMAR 26.11.03.03 which includes the following:

(1) A description of the proposed change, the emissions resulting from the change, and any new applicable requirements that will apply if the change is made;

(2) The proposed minor permit modification;

(3) Certification by a responsible official, in accordance with COMAR 26.11.02.02F, that:

(a) The proposed change meets the criteria for a minor permit modification, and

(b) The Permittee has obtained or applied for all required permits-to-construct required by COMAR 26.11.03.16 with respect to the proposed change;

(4) Completed forms for the Department to use to notify the EPA and affected states, as required by COMAR 26.11.03.07-.12.

c. Permittee's Ability to Make Change

(1) For changes proposed as minor permit modifications to this permit that will require the applicant to obtain a permit to construct, the permit to construct must be issued prior to the new change.

(2) During the period of time after the Permittee applies for a minor modification but before the Department acts in accordance with COMAR 26.11.03.16F(2):

(a) The Permittee shall comply with applicable requirements of the Clean Air Act related to the change and the permit terms and conditions described in the application for the minor modification.

(b) The Permittee is not required to comply with the terms and conditions in the permit it seeks to modify. If the Permittee fails to comply with the terms and conditions in the application during this time, the terms and conditions of both this permit and the application for modification may be enforced against it.

d. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.16 is not within the scope of this regulation.

e. Minor permit modification procedures may be used for Part 70 permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, but only to the extent that the minor permit modification procedures are explicitly provided for in regulations approved by the EPA as part of the Maryland SIP or in other applicable requirements of the Clean Air Act.

## 14. ADMINISTRATIVE PART 70 OPERATING PERMIT AMENDMENTS

**[COMAR 26.11.03.15]**

The Permittee may apply to the department to make an administrative permit amendment as provided in COMAR 26.11.03.15 and in accordance with the following conditions:

a. An application for an administrative permit amendment shall:

(1) Be in writing;

(2) Include a statement certified by a responsible official that the proposed amendment meets the criteria in COMAR 26.11.03.15 for an administrative permit amendment, and

(3) Identify those provisions of this part 70 permit for which the amendment is requested, including the basis for the request.

b. An administrative permit amendment:

(1) Is a correction of a typographical error;

(2) Identifies a change in the name, address, or phone number of a person identified in this permit, or a similar administrative change involving the Permittee or other matters which are not directly related to the control of air pollution;

(3) requires more frequent monitoring or reporting by the Permittee;

(4) Allows for a change in ownership or operational control of a source for which the Department determines that no other revision to the permit is necessary and is documented as per COMAR 26.11.03.15B(4);

(5) Incorporates into this permit the requirements from preconstruction review permits or approvals issued by the Department in accordance with COMAR 26.11.03.15B(5), but only if it satisfies 40 CFR 70.7(d)(1)(v);

(6) Incorporates any other type of change, as approved by the EPA, which is similar to those in COMAR 26.11.03.15B(1)—(4);

(7) Notwithstanding COMAR 26.11.03.15B(1)—(6), all modifications to acid rain control provisions included in this Part 70 permit are governed by applicable requirements promulgated under Title IV of the Clean Air Act; or

(8) Incorporates any change to a term or condition specified as State-only enforceable, if the Permittee has obtained all necessary permits-to-construct and approvals that apply to the change.

c. The Permittee may make the change addressed in the application for an administrative amendment upon receipt by the Department of the application, if all permits-to-construct or approvals otherwise required by COMAR 26.11.02 prior to making the change have first been obtained from the Department.

d. The permit shield in COMAR 26.11.03.23 applies to administrative permit amendments made under Section B(5) of COMAR 26.11.03.15 , but only after the Department takes final action to revise the permit.

e. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.15 is not within the scope of this regulation.

## 15. OFF-PERMIT CHANGES TO THIS SOURCE

**[COMAR 26.11.03.19]**

The Permittee may make off-permit changes to this facility as provided in COMAR 26.11.03.19 and in accordance with the following conditions:

a. The Permittee may make a change to this permitted facility that is not addressed or prohibited by the federally enforceable conditions of this Part 70 permit without obtaining a Part 70 permit revision if:

   (1) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;

   (2) The change is not subject to any requirements under Title IV of the Clean Air Act;

   (3) The change is not a Title I modification; and

   (4) The change does not violate an applicable requirement of the Clean Air Act or a federally enforceable term or condition of the permit.

b. For a change that qualifies under COMAR 26.11.03.19, the Permittee shall provide contemporaneous written notice to the Department and the EPA, except for a change to an emissions unit or activity that is exempt from the Part 70 permit application, as provided in COMAR 26.11.03.04. This written notice shall describe the change, including the date it was made, any change in emissions, including the pollutants emitted, and any new applicable requirements of the Clean Air Act that apply as a result of the change.

c. Upon satisfying the requirements of COMAR 26.11.03.19, the Permittee may make the proposed change.

d. The Permittee shall keep a record describing:

   (1) Changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement of the Clean Air Act , but not otherwise regulated under this permit; and

   (2) The emissions resulting from those changes.

e. Changes that qualify under COMAR 26.11.03.19 are not subject to the requirements for Part 70 revisions.

f. The Permittee shall include each off-permit change under COMAR 26.11.03.19 in the application for renewal of the part 70 permit.

g. The permit shield in COMAR 26.11.03.23 does not apply to off-permit changes made under COMAR 26.11.03.19.

h. The Permittee is subject to enforcement action if it is determined that an off-permit change made under COMAR 26.11.03.19 is not within the scope of this regulation.

## 16. ON-PERMIT CHANGES TO SOURCES

**[COMAR 26.11.03.18]**

The Permittee may make on-permit changes that are allowed under Section 502(b)(10) of the Clean Air Act as provided in COMAR 26.11.03.18 and in accordance with the following conditions:

a. The Permittee may make a change to this facility without obtaining a revision to this Part 70 permit if:

(1) The change is not a Title I modification;

(2) The change does not result in emissions in excess of those expressly allowed under the federally enforceable provisions of the Part 70 permit for the permitted facility or for an emissions unit within the facility, whether expressed as a rate of emissions or in terms of total emissions;

(3) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;

(4) The change does not violate an applicable requirement of the Clean Air Act;

(5) The change does not violate a federally enforceable permit term or condition related to monitoring, including test methods, record keeping, reporting, or compliance certification requirements;

(6) The change does not violate a federally enforceable permit term or condition limiting hours of operation, work practices, fuel usage, raw material usage, or production levels if the term or

condition has been established to limit emissions allowable under this permit;

(7) If applicable, the change does not modify a federally enforceable provision of a compliance plan or schedule in this Part 70 permit unless the Department has approved the change in writing; and

(8) This permit does not expressly prohibit the change under COMAR 26.11.03.18.

b. The Permittee shall notify the Department and the EPA in writing of a proposed on-permit change under COMAR 26.11.03.18 not later than 7 days before the change is made. The written information shall include the following information:

(1) A description of the proposed change;

(2) The date on which the change is proposed to be made;

(3) Any change in emissions resulting from the change, including the pollutants emitted;

(4) Any new applicable requirement of the Clean Air Act; and

(5) Any permit term or condition that would no longer apply.

c. The responsible official of this facility shall certify in accordance with COMAR 26.11.02.02F that the proposed change meets the criteria for the use of on-permit changes under COMAR 26.11.03.18.

d. The Permittee shall attach a copy of each notice required by condition b. above to this Part 70 permit.

e. On-permit changes that qualify under COMAR 26.11.03.18 are not subject to the requirements for part 70 permit revisions.

f. Upon satisfying the requirements under COMAR 26.11.03.18, the Permittee may make the proposed change.

g. The permit shield in COMAR 26.11.03.23 does not apply to on-permit changes under COMAR 26.11.03.18.

h. The Permittee is subject to enforcement action if it is determined that an on-permit change made under COMAR 26.11.03.18 is not within the scope of the regulation or violates any requirement of the State air pollution control law.

## 17. FEE PAYMENT

**[COMAR 26.11.02.16A(2) & (5)(b)]**

a. The fee for this Part 70 permit is as prescribed in Regulation .19 of COMAR 26.11.02.

b. The fee is due on and shall be paid on or before each 12-month anniversary date of the permit.

c. Failure to pay the annual permit fee constitutes cause for revocation of the permit by the Department.

## 18. REQUIREMENTS FOR PERMITS-TO-CONSTRUCT AND APPROVALS

**[COMAR 26.11.02.09]**

The Permittee may not construct or modify or cause to be constructed or modified any of the following sources without first obtaining, and having in current effect, the specified permits-to-construct and approvals:

a. New Source Review source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;

b. Prevention of Significant Deterioration source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;

c. New Source Performance Standard source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;

d. National Emission Standards for Hazardous Air Pollutants source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;

e. A stationary source of lead that discharges one ton per year or more of lead or lead compounds measured as elemental lead, permit to construct required, except for generating stations constructed by electric companies;

f. All stationary sources of air pollution, including installations and air pollution control equipment, except as listed in COMAR 26.11.02.10, permit to construct required;

g. In the event of a conflict between the applicability of (a.— e.) above and an exemption listed in COMAR 26.11.02.10, the provision that requires a permit applies.

h. Approval of a PSD or NSR source by the Department does not relieve the Permittee obtaining an approval from also obtaining all permits-to-construct required b y (c.— g.) above.

## 19. CONSOLIDATION OF PROCEDURES FOR PUBLIC PARTICIPATION

**[COMAR 26.11.02.11C] and [COMAR 26.11.03.01K]**

The Permittee may request the Department to authorize special procedures for the Permittee to apply simultaneously, to the extent possible, for a permit to construct and a revision to this permit.

These procedures may provide for combined public notices, informational meetings, and public hearings for both permits but shall not adversely affect the rights of a person, including EPA and affected states, to obtain information about the application for a permit, to comment on an application, or to challenge a permit that is issued.

These procedures shall not alter any existing permit procedures or time frames.

## 20. PROPERTY RIGHTS

**[COMAR 26.11.03.06E(4)]**

This Part 70 permit does not convey any property rights of any sort, or any exclusive privileges.

## 21. SEVERABILITY

**[COMAR 26.11.03.06A(5)]**

If any portion of this Part 70 permit is challenged, or any term or condition deemed unenforceable, the remainder of the requirements of the permit continues to be valid.

## 22. INSPECTION AND ENTRY

**[COMAR 26.11.03.06G(3)]**

The Permittee shall allow employees and authorized representatives of the Department, the EPA, and local environmental health agencies, upon presentation of credentials or other documents as may be required by law, to:

a. Enter at a reasonable time without delay and without prior notification the Permittee's property where a Part 70 source is located, emissions-related activity is conducted, or records required by this permit are kept;

b. Have access to and make copies of records required by the permit;

c. Inspect all emissions units within the facility subject to the permit and all related monitoring systems, air pollution control equipment, and practices or operations regulated or required by the permit; and

d. Sample or monitor any substances or parameters at or related to the emissions units at the facility for the purpose of determining compliance with the permit.

## 23. DUTY TO PROVIDE INFORMATION

**[COMAR 26.11.03.06E(5)]**

The Permittee shall furnish to the Department, within a reasonable time specified by the Department, information requested in writing by the Department in order to determine whether the Permittee is in compliance with the federally enforceable conditions of this Part 70 permit, or whether cause exists for revising or revoking the permit. Upon request, the

Permittee shall also furnish to the Department records required to be kept under the permit.

For information claimed by the Permittee to be confidential and therefore potentially not discloseable to the public, the Department may require the Permittee to provide a copy of the records directly to the EPA along with a claim of confidentiality.

The Permittee shall also furnish to the Department, within a reasonable time specified by the Department, information or records requested in writing by the Department in order to determine if the Permittee is in compliance with the State-only enforceable conditions of this permit.

## 24. COMPLIANCE REQUIREMENTS

**[COMAR 26.11.03.06E(1)] and [COMAR 26.11.03.06A(11)] and [COMAR 26.11.02.05]**

The Permittee shall comply with the conditions of this Part 70 permit. Noncompliance with the permit constitutes a violation of the Clean Air Act, and/or the Environment Article Title 2 of the Annotated Code of Maryland and may subject the Permittee to:

a. Enforcement action,

b. Permit revocation or revision,

c. Denial of the renewal of a Part 70 permit, or

d. Any combination of these actions.

The conditions in this Part 70 permit are enforceable by EPA and citizens under the Clean Air Act except for the State-only enforceable conditions.

Under Environment Article Section 2-609, Annotated Code of Maryland, the Department may seek immediate injunctive relief against a person who violates this permit in such a manner as to cause a threat to human health or the environment.

## 25. CREDIBLE EVIDENCE

Nothing in this permit shall be interpreted to preclude the use of credible evidence to demonstrate noncompliance with any term of this permit.

## 26. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

**[COMAR 26.11.03.06E(2)]**

The need to halt or reduce activity in order to comply with the conditions of this permit may not be used as a defense in an enforcement action.

## 27. CIRCUMVENTION

**[COMAR 26.11.01.06]**

The Permittee may not install or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total weight of emissions, conceals or dilutes emissions which would otherwise constitute a violation of any applicable air pollution control regulation.

## 28. PERMIT SHIELD

**[COMAR 26.11.03.23]**

A permit shield as described in COMAR 26.11.03.23 shall apply only to terms and conditions in this Part 70 permit that have been specifically identified as covered by the permit shield. Neither this permit nor COMAR 26.11.03.23 alters the following:

a. The emergency order provisions in Section 303 of the Clean Air Act, including the authority of EPA under that section;

b. The liability of the Permittee for a violation of an applicable requirement of the Clean Air Act before or when this permit is issued or for a violation that continues after issuance;

c. The requirements of the Acid Rain Program, consistent with Section 408(a) of the Clean Air Act;

d. The ability of the Department or EPA to obtain information from a source pursuant to Maryland law and Section 114 of the Clean Air Act; or

e. The authority of the Department to enforce an applicable requirement of the State air pollution control law that is not an applicable requirement of the Clean Air Act.

## 29. ALTERNATE OPERATING SCENARIOS

**[COMAR 26.11.03.06A(9)]**

For all alternate operating scenarios approved by the Department and contained within this permit, the Permittee, while changing from one approved scenario to another, shall contemporaneously record in a log maintained at the facility each scenario under which the emissions unit is operating and the date and time the scenario started and ended.

## SECTION III PLANT WIDE CONDITIONS

### 1. PARTICULATE MATTER FROM CONSTRUCTION AND DEMOLITION

**[COMAR 26.11.06.03D]**

The Permittee shall not cause or permit any building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

### 2. OPEN BURNING

**[COMAR 26.11.07]**

Except as provided in COMAR 26.11.07.04, the Permittee shall not cause or permit an open fire from June 1 through August 31 of any calendar year. Prior to any open burning, the Permittee shall request and receive approval from the Department.

### 3. AIR POLLUTION EPISODE

**[COMAR 26.11.05.04]**

When requested by the Department, the Permittee shall prepare in writing standby emissions reduction plans, consistent with good industrial practice and safe operating procedures, for reducing emissions creating air pollution during periods of Alert, Warning, and Emergency of an air pollution episode.

### 4. REPORT OF EXCESS EMISSIONS AND DEVIATIONS

**[COMAR 26.11.01.07] and [COMAR 26.11.03.06C(7)]**

The Permittee shall comply with the following conditions for occurrences of excess emissions and deviations from requirements of this permit, including those in Section VI – State-only Enforceable Conditions:

a. Report any deviation from permit requirements that could endanger human health or the environment, by orally notifying the Department immediately upon discovery of the deviation;

b. Promptly report all occurrences of excess emissions that are expected to last for one hour or longer by orally notifying the Department of the onset and termination of the occurrence;

c. When requested by the Department the Permittee shall report all deviations from permit conditions, including those attributed to malfunctions as defined in COMAR 26.11.01.07A, within 5 days of the request by submitting a written description of the deviation to the Department. The written report shall include the cause, dates and times of the onset and termination of the deviation, and an account of all actions planned or taken to reduce, eliminate, and prevent recurrence of the deviation;

d. The Permittee shall submit to the Department semi-annual monitoring reports that confirm that all required monitoring was performed, and that provide accounts of all deviations from permit requirements that occurred during the reporting periods. Reporting periods shall be January 1 through June 30 and July 1 through December 31, and reports shall be submitted within 30 days of the end of each reporting period. Each account of deviation shall include a description of the deviation, the dates and times of onset and termination, identification of the person who observed or discovered the deviation, causes and corrective actions taken, and actions taken to prevent recurrence. If no deviations from permit conditions occurred during a reporting period, the Permittee shall submit a written report that so states.

e. When requested by the Department, the Permittee shall submit a written report to the Department within 10 days of receiving the request concerning an occurrence of excess emissions. The report shall contain the information required in COMAR 26.11.01.07D(2).

## 5. ACCIDENTAL RELEASE PROVISIONS

**[COMAR 26.11.03.03B(23)] and [40 CFR 68]**

Should the Permittee become subject to 40 CFR 68 during the term of this permit, the Permittee shall submit risk management plans by the date specified in 40 CFR 68.150 and shall certify compliance with the requirements of 40 CFR 68 as part of the annual compliance certification as required by 40 CFR 70.

The Permittee shall initiate a permit revision or reopening according to the procedures of 40 CFR 70.7 to incorporate appropriate permit conditions into the Permittee's Part 70 permit.

## 6. GENERAL TESTING REQUIREMENTS

**[COMAR 26.11.01.04]**

The Department may require the Permittee to conduct, or have conducted, testing to determine compliance with this Part 70 permit. The Department, at its option, may witness or conduct these tests. This testing shall be done at a reasonable time, and all information gathered during a testing operation shall be provided to the Department.

## 7. EMISSIONS TEST METHODS

**[COMAR 26.11.01.04]**

Compliance with the emissions standards and limitations in this Part 70 permit shall be determined by the test methods designated and described below or other test methods submitted to and approved by the Department.

Reference documents of the test methods approved by the Department include the following:

a. 40 CFR 60, appendix A

b. 40 CFR 51, appendix M

c. The Department's Technical Memorandum 91-01 "Test Methods and Equipment Specifications for Stationary Sources", (January 1991), as amended through Supplement 3, (October 1, 1997)

## 8. EMISSIONS CERTIFICATION REPORT

**[COMAR 26.11.01.05-1] and [COMAR 26.11.02.19C] and [COMAR 26.11.02.19D]**

The Permittee shall certify actual annual emissions of regulated pollutants from the facility on a calendar year basis.

a. The certification shall be on forms obtained from the Department and submitted to the Department not later than April 1 of the year following the year for which the certification is required;

b. The individual making the certification shall certify that the information is accurate to the individual's best knowledge. The individual shall be:

   (1) Familiar with each source for which the certifications forms are submitted, and

   (2) Responsible for the accuracy of the emissions information;

c. The Permittee shall maintain records necessary to support the emissions certification including the following information if applicable:

   (1) The total amount of actual emissions of each regulated pollutant and the total of all regulated pollutants;

   (2) An explanation of the methods used to quantify the emissions and the operating schedules and production data that were used to determine emissions, including significant assumptions made;

   (3) Amounts, types and analyses of all fuels used;

   (4) Emissions data from continuous emissions monitors that are required by this permit, including monitor calibration and malfunction information;

   (5) Identification, description, and use records of all air pollution control equipment and compliance monitoring equipment including:

      (a) Significant maintenance performed,
      (b) Malfunctions and downtime, and
      (c) Episodes of reduced efficiency of all equipment;

   (6) Limitations on source operation or any work practice standards that significantly affect emissions; and

(7) Other relevant information as required by the Department.

## 9. COMPLIANCE CERTIFICATION REPORT

**[COMAR 26.11.03.06G(6) and (7)]**

The Permittee shall submit to the Department and EPA Region III a report certifying compliance with each term of this Part 70 permit including each applicable standard, emissions limitation, and work practice for the previous calendar year by April 1 of each year.

a. The compliance certification shall include:

(1) The identification of each term or condition of this permit which is the basis of the certification;

(2) The compliance status;

(3) Whether the compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of each source, currently and over the reporting period; and

(5) Any other information required to be reported to the Department that is necessary to determine the compliance status of the Permittee with this permit.

b. The Permittee shall submit the compliance certification reports to the Department and EPA simultaneously.

## 10. CERTIFICATION BY RESPONSIBLE OFFICIAL

**[COMAR 26.11.02.02F]**

All application forms, reports, and compliance certifications submitted pursuant to this permit shall be certified by a responsible official as to truth, accuracy, and completeness. The Permittee shall expeditiously notify the Department of an appointment of a new responsible official.

The certification shall be in the following form:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

## 11. SAMPLING AND EMISSIONS TESTING RECORD KEEPING

**[COMAR 26.11.03.06C(5)]**

The Permittee shall gather and retain the following information when sampling and testing for compliance demonstrations:

a. The location as specified in this permit, and the date and time that samples and measurements are taken;

b. All pertinent operating conditions existing at the time that samples and measurements are taken;

c. The date that each analysis of a sample or emissions test is performed and the name of the person taking the sample or performing the emissions test;

d. The identity of the Permittee, individual, or other entity that performed the analysis;

e. The analytical techniques and methods used; and

f. The results of each analysis.

## 12. GENERAL RECORDKEEPING

**[COMAR 26.11.03.06C(6)]**

The Permittee shall retain records of all monitoring data and information that support the compliance certification for a period of five (5) years from the date that the monitoring, sample measurement, application, report or emissions test was completed or submitted to the Department.

These records and support information shall include:

a. All calibration and maintenance records;

b. All original data collected from continuous monitoring instrumentation;

c. Records which support the annual emissions certification; and

d. Copies of all reports required by this permit.

## 13. GENERAL CONFORMITY

**[COMAR 26.11.26.09]**

The Permittee shall comply with the general conformity requirements of 40 CFR 93, Subpart B and COMAR 26.11.26.09.

## 14. ASBESTOS PROVISIONS

**[40 CFR 61, Subpart M]**

The Permittee shall comply with 40 CFR 61, Subpart M when conducting any renovation or demolition activities at the facility.

## 15. OZONE DEPLETING REGULATIONS

**[40 CFR 82, Subpart F]**

The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for MVACs in subpart B:

a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the prohibitions and required practices pursuant to 40 CFR 82.154 and 82.156.

b. Equipment used during the maintenance, service, repair or disposal of appliances shall comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repairs or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.

d. Persons performing maintenance, service, repairs or disposal of appliances shall certify with the Administrator pursuant to 40 CFR 82.162.

e. Persons disposing of small appliances, MVACS, and MVAC-like appliances as defined in 40 CFR 82.152, shall comply with record keeping requirements pursuant to 40 CFR 82.166.

f. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.

g. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

## 16. ACID RAIN PERMIT

Not applicable

## SECTION IV PLANT SPECIFIC CONDITIONS

This section provides tables that include the emissions standards, emissions limitations, and work practices applicable to each emissions unit located at this facility. The Permittee shall comply with all applicable emissions standards, emissions limitations and work practices included herein.

The tables also include testing, monitoring, record keeping and reporting requirements specific to each emissions unit. In addition to the requirements included here in **Section IV**, the Permittee is also subject to the general testing, monitoring, record keeping and reporting requirements included in **Section III – Plant Wide Conditions** of this permit.

Unless otherwise provided in the specific requirements for an emissions unit, the Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, all records that the Permittee is required under this section to establish**. [Reference: COMAR 26.11.03.06C(5)(g)]**

| Table IV – 1 | |
|---|---|
| **1.0** | **Emissions Unit Number(s) – Painting and Coating Operations** – **EU01**<br><br>**MDE Reg. No. 6-0902**<br><br>Engine Painting and Surface Coating operations in multiple locations, including, but not limited to, Buildings 90, 32, 40, 78, and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations.<br><br>**MDE Reg. No. 6-0903**<br><br>Fiberglass Application operations in Bldg 32. |
| **1.1** | **Applicable Standards/Limits:**<br><br>**A. Control of Visible Emissions**<br>"In Areas III and IV a person may not cause or permit the discharge of emissions from any installation or building, other than water in an uncombined form, which is visible to human observers." **[Reference: COMAR 26.11.06.02C(2)]**<br>"The visible emissions standards in C of this regulation do not apply to emissions during start-up and process modifications or adjustments, or occasional cleaning of control equipment, if: (a) The visible emissions are not greater than 40 percent opacity; and (b) The visible emissions do not |

| Table IV – 1 | |
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occur for more than 6 consecutive minutes in any 60 minute period." **[Reference: COMAR 26.11.06.02A(2)]**

**B. Control of Particulate Matter**

"A person may not cause or permit to be discharged into the outdoor atmosphere from any other installation, particulate matter in excess of 0.03 gr/SCFD (68.7 mg/dscm)." **[Reference: COMAR 26.11.06.03B(2)(a)]**

"A person may not cause or permit emissions from an unconfined source without taking reasonable precautions to prevent particulate matter from becoming airborne. These reasonable precautions shall include, when appropriate as determined by the Department, the installation and use of hoods, fans, and dust collectors to enclose, capture, and vent emissions. In making this determination, the Department shall consider technological feasibility, practicality, economic impact, and the environmental consequences of the decision." **[Reference: COMAR 26.11.06.03C(1)]**

**C. Control of VOC Emissions**

COMAR 26.11.19.02I – Good Operating Practices, Equipment Cleanup, and VOC Storage.

(1) Applicability. The requirements in this section apply to a person who owns or operates an installation that is subject to any requirement in this chapter.

(2) Good Operating Practices.
- (a) A person who is subject to this section shall implement good operating practices to minimize VOC emissions into the atmosphere.
- (b) Good operating practices shall, at a minimum, include the following:
  - (i) Provisions for training of operators on practices, procedures, and maintenance requirements that are consistent with the equipment manufacturers' recommendations and the source's experience in operating the equipment, with the training to include proper procedures for maintenance of air pollution control equipment;
  - (ii) Maintenance of covers on containers and other vessels that contain VOC and VOC-containing materials when not in use;
  - (iii) Minimize spills of VOC-containing cleaning materials;
  - (iv) Convey VOC-containing cleaning materials from one location

| Table IV – 1 | |
|---|---|
| | to another in closed containers or pipelines;<br>(v) Minimize VOC emissions from cleaning of storage, mixing, and conveying equipment;<br>(vi) As practical, scheduling of operations to minimize color or material changes when applying VOC coatings or other materials by spray gun;<br>(vii) For spray gun applications of coatings, use of high volume low pressure (HVLP) or other high efficiency application methods where practical; and<br>(viii) As practical, mixing or blending materials containing VOC in closed containers and taking preventive measures to minimize emissions for products that contain VOC.<br>(c) A person subject to this regulation shall:<br>(i) Establish good operating practices in writing;<br>(ii) Make the written operating practices available to the Department upon request; and<br>(iii) Display the good operating practices so that they are clearly visible to the operator or include them in operator training.<br>(3) Equipment Cleanup.<br>(a) A person subject to this section shall take all reasonable precautions to prevent or minimize the discharge of VOC into the atmosphere when cleaning process and coating application equipment, including containers, vessels, tanks, lines, and pumps.<br>(b) Reasonable precautions for equipment cleanup shall, at a minimum, include the following:<br>(i) Storing all wastes and waste materials, including cloth and paper that are contaminated with VOC, in closed containers;<br>(ii) Preparing written standard operating procedures for frequently cleaned equipment, including when practical, provisions for the use of low-VOC or non-VOC materials and procedures to minimize the quantity of VOC materials used;<br>(iii) Using enclosed spray gun cleaning, VOC-recycling systems and other spray gun cleaning methods where practical that reduce or eliminate VOC emissions; and<br>(iv) Using, when practical, detergents, high-pressure water, or other non-VOC cleaning options to clean coating lines, containers, and process equipment.<br>(4) VOC Storage and Transfer.<br>(a) A person subject to this section who stores VOCs shall, at a minimum, install conservation vents or other vapor control measures on storage tanks with a capacity of 2,000 gallons or more to minimize VOC emissions.<br>(b) A person subject to this section shall, at a minimum, utilize vapor |

| Table IV – 1 | |
|---|---|
| | balance, vapor control lines, or other vapor control measures when VOCs are transferred from a tank truck into a stationary storage tank with a capacity greater than 10,000 gallons and less than 40,000 gallons that store VOCs or materials containing VOCs, other than gasoline, that have a vapor pressure greater than 1.5 psia.<br><br>Control of VOC Equipment Leaks.<br><br>COMAR 26.11.19.16 – General Requirements.<br>"A person subject to this regulation shall comply with all of the following requirements:<br>(1) Visually inspect all components on the premises for leaks at least once each calendar month.<br>(2) Tag any leak immediately so that the tag is clearly visible. The tag shall be made of a material that will withstand any weather or corrosive conditions to which it may be normally exposed. The tag shall bear an identification number, the date the leak was discovered, and the name of the person who discovered the leak. The tag shall remain in place until the leak has been repaired.<br>(3) Take immediate action to repair all observed VOC leaks that can be repaired within 48 hours.<br>(4) Repair all other leaking components not later than 15 days after the leak is discovered. If a replacement part is needed, the part shall be ordered within 3 days after discovery of the leak, and the leak shall be repaired within 48 hours after receiving the part.<br>(5) Maintain a supply of components or component parts that are recognized by the source to wear or corrode, or that otherwise need to be routinely replaced, such as seals, gaskets, packing, and pipe fittings.<br>(6) Maintain a log that includes the name of the person conducting the inspection and the date on which leak inspections are made, the findings of the inspection, and a list of leaks by tag identification number. The log shall be made available to the Department upon request. Leak records shall be maintained for a period of not less than 2 years from the date of their occurrence." **[Reference: COMAR 26.11.19.16(C)]**<br><br>"Exceptions. Components that cannot be repaired as required in this regulation because they are inaccessible, or that cannot be repaired during operation of the source, shall be identified in the log and included within the source's maintenance schedule for repair during the next source shutdown." **[Reference: COMAR 26.11.19.16(D)]** |

| Table IV – 1 | |
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| | Control of Volatile Organic Compounds from Marine Vessel Coating Operations.<br><br>**Note 1**. Compliance with COMAR 26.11.19.27 will apply only to the engine painting and surface coating operations. **[MDE Reg. No. 6-0902]**<br><br>COMAR 26.11.19.27(A) **–** Applicability.<br>"This regulation applies to marine vessel coating operations at a premises where the total potential to emit VOC emissions equals or exceeds 25 tons (22.75 metric tons) per year or actual emissions of 20 pounds (9 kilograms) per day from all marine vessel coating operations at the premises." **[Reference: COMAR 26.11.19.27(A)]**<br><br>COMAR 26.11.19.27(C) **–** Coating Requirements.<br>"(1) Except as provided in §C(5) of this regulation, a person who owns or operates a marine vessel coating operation subject to this regulation may not apply a coating that exceeds the standards in §C(2), (3), and (4) of this regulation.<br><br>(2) Coating Standards. (*See table in the rule*)<br><br>(3) If a coating satisfies the definition of more than one category of coating listed in §C(2) of this regulation, then the coating is subject to the maximum VOC content for any applicable category.<br><br>(4) Any other coating used in a marine vessel coating operation not listed in §C(2) of this regulation may not exceed a VOC content of 2.83 pounds per gallon (340 grams per liter), as applied.<br><br>(5) A person who owns or operates a marine vessel coating operation subject to this regulation may apply a coating that exceeds the VOC content established in this regulation if:<br><br>(a) The VOC content of the coating does not exceed the otherwise applicable standard in §C(2), (3), or (4) of this regulation by more than 20 percent; and<br><br>(b) The coating exceeding the standards in §C(2), (3), or (4) of this regulation is used only during the period from November 1 of a year through March 31 of the following year." **[Reference: COMAR 26.11.19.27(C)]**<br><br>COMAR 26.11.19.27(D) **–** Cleanup Requirements. |

**Table IV – 1**

"A person who owns or operates a marine vessel coating operation subject to this regulation shall take reasonable precautions to minimize the release of VOC into the atmosphere including:

(1) Storing all waste materials containing VOC, including cloth and paper, in closed containers;

(2) Maintaining lids on any VOC-bearing materials when not in use; and

(3) Using enclosed containers or VOC recycling equipment to clean spray gun equipment."**[Reference: COMAR 26.11.19.27(D)]**

COMAR 26.11.19.27(E) **–** Compliance Procedures.
"Compliance with the requirements of this regulation shall be achieved using the test methods and procedures in Regulation .02 of this chapter." **[Reference: COMAR 26.11.19.27(E)]**

**Note 2**. Compliance with COMAR 26.11.19.27 can be achieved by complying with the standards and procedures outlined in 40 CFR 63, Subpart II "National Emission Standard for Shipbuilding and Ship Repair (Surface Coating)."

**D. Control of Hazardous Air Pollutants**

Note: The requirements in 40 CFR 63, Subpart II, only apply to the engine painting and surface coating operations. **[MDE Reg. No. 6-0902]**

40 CFR 63, Subpart II **–** National Emission Standard for Shipbuilding and Ship Repair (Surface Coating).

**40 CFR §63.781 –** Applicability.
"(a) The provisions of this subpart apply to shipbuilding and ship repair operations at any facility that is a major source.

(b) The provisions of this subpart do not apply to coatings used in volumes of less than 200 liters (52.8 gallons) per year provided the total volume of coating exempt under this paragraph does not exceed 1000-liters per year (264 gallons per year) at any facility. Coatings exempt under this paragraph shall be clearly labeled as "low-usage exempt," and the volume of each such coating applied shall be maintained in the facility's records.

(c) The provisions of this subpart do not apply to coatings applied with hand-held, nonrefillable, aerosol containers or to unsaturated polyester

| Table IV – 1 | |
|---|---|
| | resin (i.e. fiberglass lay-up) coatings. Coatings applied to suitably prepared fiberglass surfaces for protective or decorative purposes are not subject to this subpart.<br><br>(d) If you are authorized in accordance with 40 CFR 63.783(c) to use an add-on control system as an alternative means of limiting emissions from coating operations, in response to an action to enforce the standards set forth in this subpart, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by a malfunction, as defined in 40 CFR 63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all the requirements in the affirmative defense. The affirmative defense shall not be available in response to claims for injunctive relief.<br><br>(1) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (d)(2) of this section, and must prove by a preponderance of evidence that:<br><br>(i) The excess emissions:<br><br>(A) Were caused by a sudden, infrequent and unavoidable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner; and<br><br>(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and<br><br>(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and<br><br>(D) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and<br><br>(ii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and<br><br>(iii) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and<br><br>(iv) If the excess emissions resulted from a bypass of control equipment |

| Table IV – 1 | |
|---|---|
| | or a process, then the bypass was unavoidable to prevent loss of life, personal injury or severe property damage; and<br><br>(v) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and<br><br>(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and<br><br>(vii) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and<br><br>(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and<br><br>(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction." **[Reference: 40 CFR §63.781]**<br><br>**40 CFR §63.783 –** Standards.<br>"(a) No owner or operator of any existing or new affected source shall cause or allow the application of any coating to a ship with an as-applied VOHAP content exceeding the applicable limit given in Table 2 of this subpart, as determined by the procedures described in §63.785 (c)(1) through (c)(4). For the compliance procedures described in §63.785 (c)(1) through (c)(3), VOC shall be used as a surrogate for VOHAP, and Method 24 of appendix A to 40 CFR part 60 shall be used as the definitive measure for determining compliance. For the compliance procedure described in §63.785(c)(4), an alternative test method capable of measuring independent VOHAP shall be used to determine compliance. The method must be submitted to and approved by the Administrator."<br><br>"(b) Each owner or operator of a new or existing affected source shall ensure that:<br>(1) All handling and transfer of VOHAP-containing materials to and from containers, tanks, vats, drums and piping system is conducted in a manner that minimizes spills.<br>(2) All containers, tanks, vats, drums, and piping systems are free of |

**Table IV – 1**

cracks, holes, and other defects and remain closed unless materials are being added to or removed from them."

"(c) Approval of alternative means of limiting emissions.
(1) The owner or operator of an affected source may apply to the Administrator for permission to use an alternative means (such as an add-on control system) of limiting emissions from coating operations. The application must include:
(i) An engineering material balance evaluation that provides a comparison of the emissions that would be achieved using the alternative means to those that would result from using coatings that comply with the limits in Table 2 of this subpart, or the results from an emission test that accurately measures the capture efficiency and control device efficiency achieved by the control system and the composition of the associated coatings so that the emissions comparison can be made;
(ii) A proposed monitoring protocol that includes operating parameter values to be monitored for compliance and an explanation of how the operating parameter values will be established through a performance test; and
(iii) Details of appropriate recordkeeping and reporting procedures.
(2) The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, post control emissions of VOHAP per volume applied solids will be no greater than those from the use of coatings that comply with the limits in Table 2 of this subpart.
(3) The Administrator may condition approval on operation, maintenance, and monitoring requirements to ensure that emissions from the source are no greater than those that would otherwise result from this subpart."
**[Reference: 40 CFR §63.783]**

Table 2 to Subpart II of Part 63 – Volatile Organic HAP (VOHAP) Limits for Marine Coatings

| Coating Category | VOHAP Limits [abc] | | |
|---|---|---|---|
| | Gram/liter coating (minus water and exempt compounds | Grams/liter solids [d] | |
| | | $t \geq 4.5\ ^{o}C$ | $t < 4.5\ ^{o}C$ [e] |
| General Use | 340 | 571 | 728 |
| Specialty: | | | |
| Air flask | 340 | 571 | 728 |
| Antenna | 530 | 1439 | |
| Antifoulant | 400 | 765 | 971 |
| Heat resistant | 420 | 841 | 1069 |
| High gloss | 420 | 841 | 1069 |

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| | | | |
|---|---|---|---|
| High temperature | 500 | 1237 | 1597 |
| Inorganic zinc high-build | 340 | 571 | 728 |
| Military exterior | 340 | 571 | 728 |
| Mist | 610 | 2235 | |
| Navigational aids | 550 | 1597 | |
| Nonskid | 340 | 571 | 728 |
| Nuclear | 420 | 841 | 1069 |
| Organic zinc | 360 | 630 | 802 |
| Pre-treatment wash primer | 780 | 11095 | |
| Repair and maintenance of thermoplastics | 550 | 1597 | |
| Rubber camouflage | 340 | 571 | 728 |
| Sealant for thermal spray aluminum | 610 | 2235 | |
| Special marking | 490 | 1178 | |
| Special interior | 340 | 571 | 728 |
| Tack coat | 610 | 2235 | |
| Undersea weapons systems | 340 | 571 | 728 |
| Weld-through precon primer | 650 | 2885 | |

[a] The limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in §63.785(c)(1), but only the limit expressed in units of g/l solids (nonvolatiles) shall be used for the compliance procedures described §63.785(c) (2) through (4).
[b] VOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in §63.785(c) (1) through (3).
[c] To convert from g/l to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.
[d] VOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.
[e] These limits apply during cold-weather time periods, as defined in §63.782. Cold-weather allowances are not given to coatings in categories that permit less than 40 percent volume solids (nonvolatiles). Such coatings are subject to the same limits regardless of the weather conditions.

**40 CFR §63.783 –** Compliance Procedures.

"(a) For each batch of coating that is received by an affected source, the owner or operator shall:

(1) Determine the coating category and the applicable VOHAP limit as specified in §63.783(a).
(2) Certify the as-supplied VOC content of the batch of coating. The owner or operator may use a certification supplied by the manufacturer for the batch, although the owner or operator retains liability should subsequent testing reveal a violation. If the owner or operator performs the certification testing, only one of the containers in which the batch of coating was received is required to be tested.

(b)(1) In lieu of testing each batch of coating, as applied, the owner or

**Table IV – 1**

operator may determine compliance with VOHAP limit using any combination of the procedures described in paragraphs (c)(1), (c)(2), (c)(3) and (c)(4) of this section. The procedure used for each coating shall be determined and documented prior to application.
(2) The results of any compliance demonstration conducted by the affected source or any regulatory agency using Method 24 shall take precedence over the results using the procedures in paragraph (c)(1), (c)(2), or (c)(3) of this section.
(3) The results of any compliance demonstration conducted by the affected source or any regulatory agency using an approved test method to determine VOHAP content shall take precedence over the results using the procedures in paragraph (c)(4) of this section."

"(c)(2) ***Coatings to which thinning solvent will be added-coating-by-coating compliance***. For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall comply as follows:
(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch as follows:

$$R = [(Vs)(\text{VOHAP limit})-mVOC]/Dth \qquad \text{Eq. 1}$$

where:
R = Maximum allowable thinning ratio for a given batch (L thinner/L coating as supplied);
$V_s$ = Volume fraction of solids in the batch as supplied (L solids/L coating as supplied);
VOHAP limit=Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);
$m_{VOC}$=VOC content of the batch as supplied [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];
$D_{th}$=Density of the thinner (g/L).

If $V_s$ is not supplied directly by the coating manufacturer, the owner or operator shall determine $V_s$ as follows:

$$Vs = 1 - [m_{volatiles}/D_{avg}] \qquad \text{Eq. 2}$$

where:

| Table IV – 1 | |
|---|---|
| | $m_{volatiles}$ = Total volatiles in the batch, including VOC, water, and exempt compounds (g/L coating); and<br><br>$D_{avg}$=Average density of volatiles in the batch (g/L).<br><br>The procedures specified in §63.786(d) may be used to determine the values of variables defined in this paragraph. In addition, the owner or operator may choose to construct nomographs, based on Equation 1 of this subpart, similar or identical to the one provided in appendix B of this subpart as a means of easily estimating the maximum allowable thinning ratio.<br>(ii) Prior to the first application of each batch, notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch of the coating by affixing a label to each container of coating or through another means described in the implementation plan required in §63.787(b).<br>(iii) By the 15th day of each calendar month, determine the volume of each batch of the coating used, as supplied, during the previous month.<br>(iv) By the 15th day of each calendar month, determine the total allowable volume of thinner for the coating used during the previous month as follows:<br><br>$V_{th} = (RxVb)i + (Rcold \times Vb\text{-}cold)i$ Eq. 3<br><br>where:<br><br>$V_{th}$= Total allowable volume of thinner for the previous month (L thinner);<br>$V_b$= Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied);<br>$R_{cold}$ = Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied);<br>$V_{b\text{-}cold}$ = Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied);<br>I = Each batch of coating; and<br>N = Total number of batches of the coating.<br>(v) By the 15th day of each calendar month, determine the volume of thinner actually used with the coating during the previous month.<br>(vi) If the volume of thinner actually used with the coating [paragraph (c)(3)(v) of this section] is less than or equal to the total allowable volume of thinner for the coating [paragraph (c)(3)(iv) of this section], then compliance is demonstrated for the coating for the previous month, |

| Table IV – 1 | |
|---|---|
| | unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.<br>(3) ***Coatings to which the same thinning solvent will be added-group compliance***. For coatings to which the same thinning solvent (or other material) is routinely or sometimes added, the owner or operator shall comply as follows:<br>(i) Designate a single thinner to be added to each coating during the month and "group" coatings according to their designated thinner.<br>(ii) Prior to the first application of each batch, calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating in the group using the equations in paragraph (c)(2) of this section.<br>(iii) Prior to the first application of each "batch," notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch in the group by affixing a label to each container of coating or through another means described in the implementation plan required in §63.787(b).<br>(iv) By the 15th day of each calendar month, determine the volume of each batch of the group used, as supplied, during the previous month.<br>(v) By the 15th day of each calendar month, determine the total allowable volume of thinner for the group for the previous month using Equation 3 of this subpart.<br>(vi) By the 15th day of each calendar month, determine the volume of thinner actually used with the group during the previous month.<br>(vii) If the volume of thinner actually used with the group [paragraph (c)(3)(vi) of this section] is less than or equal to the total allowable volume of thinner for the group [paragraph (c)(3)(v) of this section], then compliance is demonstrated for the group for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60." **[Reference: 40 CFR §63.785]** |
| **1.2** | **<u>Testing Requirements</u>:**<br><br>**A. <u>Control of Visible Emissions</u>**<br>See Monitoring Requirements<br><br>**B. <u>Control of Particulate Matter</u>**<br>See Monitoring Requirements<br><br>**C. <u>Control of VOCs</u>**<br>See Monitoring Requirements<br><br>**D. <u>Control of Hazardous Air Pollutants</u>** |

| Table IV – 1 | |
|---|---|
| | 40 CFR 63, Subpart II **–** National Emission Standard for Shipbuilding and Ship Repair (Surface Coating).<br><br>**40 CFR §63.786 –** Test Methods and procedures<br>"(a) For the compliance procedures described in §63.785(c) (1) through (c)(3), Method 24 of 40 CFR part 60, Appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included.<br>(c) A coating manufacturer or the owner of an affected source may use batch formulation data as a test method in lieu of Method 24 of 40 CFR Part 60, Appendix A to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively know relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon costing formulation data. Notwithstanding such determination, in the event of conflicting results, Method 24 of 40 CFR Part 60, Appendix A shall take precedence." **[Reference: 40 CFR §63.786(a) and (c)]** |
| **1.3** | **Monitoring Requirements:**<br>**A. Control of Visible Emissions**<br>Every six months, the Permittee shall conduct a 1-minute visual observation of the engine painting operation stack, surface coating operations stack, and fabric coating operation stack, The visual observation must be conducted while the specific process is in operation. If visible emissions are observed during any visual observation, the Permittee must resume the observation of specific process exhaust on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly visual observations. If visible emissions are observed during any observation, the Permittee must inspect specific process for cause of visible emission and perform necessary adjustments or repairs within 24-hours or prior to operating the stripping operation. If visible emissions have not been eliminated, the Permittee shall perform daily 18-minute visual observation for opacity in accordance with EPA Reference Method 9 when operating the specific process. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. Control of Particulate Matter**<br>The Permittee shall continue implementing the existing preventive maintenance plan for the control equipment that describes the |

| Table IV – 1 | |
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| | maintenance activity and time schedule for completing each activity. The Permittee shall perform maintenance activities within the time frames established in the plan and shall maintain a log with records of the dates and description of the maintenance that was performed. **[Reference: COMAR 26.11.03.06C]**<br><br>**C. Control of VOCs**<br>Permittee must conduct monthly leak detection inspections and repair any leaks found during the inspection. **[Reference: COMAR 26.11.19.16(C)]**<br><br>**D. Control of Hazardous Air Pollutants**<br>40 CFR 63, Subpart II **–** National Emission Standard for Shipbuilding and Ship Repair (Surface Coating).<br>See Record Keeping Requirements |
| **1.4** | **Record Keeping Requirements:**<br>**A. Control of Visible Emissions**<br>The Permittee shall maintain on site a log of the dates and results of visible emissions observations for a period of at least 5 years. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. Control of Particulate Matter**<br>The Permittee shall maintain a copy of the preventive maintenance plan for each painting coating operation and a record of the dates of and description of maintenance activity performed. **[Reference: COMAR 26.11.03.06C]**<br><br>**C. Control of VOCs**<br><br>COMAR 26.11.19.16(C)(6) – Control of VOC Equipment Leaks. General Requirements. – Recordkeeping.<br>The Permittee shall maintain a log that includes the name of the person conducting the inspection and the date on which leak inspections are made, the findings of the inspection, a list of leaks by tag identification number and identity of components that cannot be repaired as required in this regulation because they are inaccessible, or that cannot be repaired during operation if the source. The log shall be made available to the Department upon request. Leak records, along with the log shall be maintained for a period of not less than 2 years from the date of their occurrence. **[Reference: COMAR 26.11.19.16C(6)]**<br><br>COMAR 26.11.19.27(F) – Control of Volatile Organic Compounds from |

**Table IV – 1**

Marine Vessel Coating Operations. – Recordkeeping.
"(1) A person who owns or operates a marine vessel coating operation subject to this regulation shall maintain the following records:

(a) The monthly total volume and VOC content of each coating and coating solvent used that contain VOCs; and

(b) The monthly total volume and VOC content of each cleanup solvent used that contains VOCs.

(2) Records shall be retained for 3 years and be made available to the Department on request.

(3) Compliance with the record-keeping requirements in §F(1) and (2) of this regulation constitutes compliance with Regulation .02F of this chapter."

**D. Control of Hazardous Air Pollutants**

40 CFR 63, Subpart II **–** National Emission Standard for Shipbuilding and Ship Repair (Surface Coating).

**40 CFR §63.788(b) – Record-keeping Requirements**.

(1) "Each owner or operator of a major source shipbuilding or ship repair facilities having surface coating operations less than 1000 liters (264-gallon) annual marine coating usage shall record the total volume of coating applied at the source to ships. Such records shall be complied monthly and maintained for a minimum of 5 years."

(2) "Each owner or operator of an affected source shall compile records on a monthly basis and maintain those records for a minimum of 5 years:
- (i) All documentation supporting initial notification;
- (ii) A copy of the affected source's approved plan;
- (iii) The volume of each low-usage-exempt coating applied;
- (iv) Identification of the coatings used, their appropriate coating categories, and the applicable VOHAP limit;
- (v) Certification of the as-applied VOC content of each batch of coating;
- (vi) A determination of whether containers meet the standards as described in §63.783(b)(2); and
- (vii) The results of any Method 24 of appendix A to 40 CFR Part 60 or approved VOHAP measurement test conducted on individual containers of coating as applied.

(3) The records required by paragraph b(2) of this section shall include additional information, as determined by the compliance procedure(s)

| Table IV – 1 | |
|---|---|
| | described in §63.785(c) that each affected source followed:<br>*Coatings to which thinning solvent will not be added.* The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(1) shall contain the following information:<br>A. Certification of the as-applied VOC content of each batch coating; and<br>B. The volume of each coating applied.<br>(4) If the owner or operator of an affected source detects a violation of the standards specified in §63.783, the owner or operator shall, for the remainder of the reporting period during which the violation(s) occurred, include the following information in his or her records:<br>(i) A summary of the number and duration of deviations during the reporting period, classified by reason, including known causes for which a Federally-approved or promulgated exemption from an emission limitation or standard may apply.<br>(ii) Identification of the data availability achieved during the reporting period, including a summary of the number and total duration of incidents that the monitoring protocol failed to perform in accordance with the design of the protocol or produced data that did not meet minimum data accuracy and precision requirements, classified by reason.<br>(iii) Identification of the compliance status as of the last day of the reporting period and whether compliance was continuous or intermittent during the reporting period.<br>(iv) If, pursuant to paragraph (b)(4)(iii) of this section, the owner or operator identifies any deviation as resulting from a known cause for which no Federally-approved or promulgated exemption from an emission limitation or standard applies, the monitoring report shall also include all records that the source is required to maintain that pertain to the periods during which such deviation occurred and:<br>(A) The magnitude of each deviation;<br>(B) The reason for each deviation;<br>(C) A description of the corrective action taken for each deviation, including action taken to minimize each deviation and action taken to prevent recurrence; and<br>(D) All quality assurance activities performed on any element of the monitoring protocol." **[Reference: 40 CFR §63.788(b)]** |
| **1.5** | **<u>Reporting Requirements</u>:**<br>**A. <u>Control of Visible Emissions</u>**<br>The Permittee shall report incidents of visible emissions in accordance |

**Table IV – 1**

with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations."

**B. Control of Particulate Matter**

The Permittee shall report incidents of excess emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations."

**C. Control of VOCs**

The Permittee shall submit records to the Department upon request. **[Reference: COMAR 26.11.03.06C]**

**D. Control of Hazardous Air Pollutants**

**40 CFR §63.788(c) – Reporting Requirements**.

"Before the 60th day following completion of each 6-month period after the compliance date specified in §63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b)(2) through (3) of this section, except for that information specified in paragraphs (b)(2) (I) through (ii), (b)(2)(v), (b)(3)(I)(A), (b)(3)(ii)(A), and (b)(3))(iii)(A). If a violation at an affected source is detected, the source shall also report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized according to the compliance procedure(s) followed each month by the affected source."

**General Provisions**

This source is subject to the General Provisions as listed below.

**Table 1 To Subpart II of Part 63--General Provisions of Applicability to Subpart II**

| Reference | Applies to Subpart II | Comment |
|---|---|---|
| 63.1(a)(1) - (3) | Yes | |
| 63.1(a)(4) | Yes | Subpart II clarifies the applicability of each paragraph in Subpart A to sources subject to Subpart II. |
| 63.1(a)(5) - (7) | Yes | |
| 63.1(a)(9) - (14) | Yes | |
| 63.1(b)(1) | Yes | §63.781 specifies applicability in more detail. |
| 63.1(b)(2) - (3) | Yes | |
| 63.1(c) - (e) | Yes | |
| 63.2 | Yes | Additional terms are defined in §63.782; when overlap between |

| | | |
|---|---|---|
| | | Subparts A and II occurs, Subpart II takes precedence. |
| 63.3 | Yes | Other units used in Subpart II are defined in that Subpart |
| 63.4 | Yes | |
| 63.5(a) - (c) | Yes | |
| 63.5(d) | Yes | Except information on control devices and control efficiencies should not be included in the application unless an add-on control system is or will be used to comply with Subpart II in accordance with §63.783(c). |
| 63.5(e) - (f) | Yes | |
| 63.6(a) - (b) | Yes | |
| 63.6(c) - (d) | Yes | Except §63.784(a) specifies the compliance date for existing affected sources. |
| 63.6(i) - (j) | Yes | |
| 63.9(a) - (d) | Yes | §63.787(a) extends the initial notification deadline to 180 days.§63.787(b) requires an implementation plan to be submitted with the initial notification. |
| 63.9(i) - (j) | Yes | |
| 63.10(a) - (b) | Yes | §63.788(b) - (c) list additional record keeping and reporting requirements |
| 63.10(d) | Yes | |
| 63.10(f) | Yes | |
| 63.12 - 63.15 | Yes | |

**"A permit shield shall cover the applicable requirements identified for the emission unit(s) listed in the table above."**

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| Table IV – 2 | |
|---|---|
| **2.0** | **Emissions Unit Number(s): Boilers – EU02**<br><br>**MDE Reg. No. 5-0497**<br><br>**Emission Point 1:** One (1) 65 MMBtu/hr (Keeler DS-55) natural gas /landfill gas /No. 2 fuel oil fired boiler. [Space heater] |
| **2.1** | **Applicable Standards/Limits:**<br><br>**A. Control of Visible Emissions**<br>**COMAR 26.11.09.05A** – Fuel Burning Equipment.<br>"**(2)**Areas III and IV. In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human |

**Table IV – 2**

observers.

**(3) Exceptions**. Section A(1) and (2) of this regulation do not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if:
(a) The visible emissions are not greater than 40 percent opacity; and
(b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period."

**40 CFR 60, Subpart Dc** – New Source Performance Standard (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units.
The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, **40 CFR 60, Subpart Dc**, which contains the following:
**§60.43c** – "(c) On and after the date on which the initial performance test is completed or required to be completed under Sec. 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.
(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction."

*Note: Compliance with the "No Visible Emissions" requirement of COMAR 26.11.09.05A(2) will be used to show compliance with this NSPS standard.*

**B. Control of Sulfur Oxides**
**COMAR 26.11.09.07A (2)** – Sulfur Content Limitations for Fuel.
"A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: In Areas III and IV: (b) Distillate fuel oils, 0.3 percent."

**C. Control of Nitrogen Oxides**
**COMAR 26.11.09.08B(5) –** Operator Training.
(a) For purposes of this regulation, the equipment operator to be trained may be the person who maintains the equipment and makes the

| Table IV – 2 | |
|---|---|
| | necessary adjustments for efficient operation.<br>(b) The operator training course sponsored by the Department shall include an in-house training course that is approved by the Department."<br><br>**COMAR 26.11.09.08F –** Requirements for Space Heaters.<br>"(1) A person who owns or operates a space heater as defined in Regulation .01B of this chapter shall:<br>(a) Submit to the Department a list of each affected installation on the premises and the types of fuel used in each installation;<br>(b) Develop an operating and maintenance plan to minimize $NO_x$ emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience;<br>(c) Implement the operating and maintenance plan and maintain the plan at the premises for review upon request by the Department;<br>(d) Require installation operators to attend in-State operator training programs once every 3 years on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and<br>(e) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request.<br>(2) A person who owns or operates an installation that no longer qualifies as a space heater shall inform the Department not later than 60 days after the date when the fuel-burning equipment did not qualify, and shall meet the applicable fuel-burning equipment RACT requirement in this regulation." |
| **2.2** | **Testing Requirements:**<br><br>**A. Control of Visible Emissions**<br>See Monitoring and Record Keeping Requirements, Conditions 2.3 & 2.4, below.<br><br>**B. Control of Sulfur Oxides**<br>See Monitoring and Record Keeping Requirements, Conditions 2.3 & 2.4, below.<br><br>**C. Control of Nitrogen Oxides**<br>The Permittee shall perform a combustion analysis once a year. **[Reference: COMAR 26.11.09.08E(2)]** |

| Table IV – 2 | |
|---|---|
| 2.3 | **Monitoring Requirements:**<br><br>**A. Control of Visible Emissions**<br>The Permittee shall properly operate and maintain the boilers in a manner to prevent visible emissions. **[Reference: COMAR 26.11.03.06C]**<br><br>The Permittee shall: (1) Properly operate and maintain the boilers in a manner to prevent visible emissions; and (2) Verify no visible emissions when burning No. 2 fuel oil. The Permittee shall perform a visual observation for a 6-minute period once for each 168 hours that the boiler burns oil. **Note**: *[if No. 2 fuel oil is not burned in a year, then no visual observation is required*].<br>The Permittee shall perform the following, if emissions are visible: (1) Inspect combustion control system and boiler operations, (2) Perform all necessary adjustments and/or repairs to the boiler within 48 hours, so that visible emissions are eliminated; (3) Document in writing the results of the inspections, adjustments and/or repairs to the boiler; and (4) After 48 hours, if the required adjustments and/or repairs had not eliminated the visible emissions, perform Method 9 observations once daily for 18 minutes until corrective actions have eliminated the visible emissions. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. Control of Sulfur Oxides**<br>The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the limitation on the sulfur content of the fuel oil. **[Reference: COMAR 26.11.03.06C]**<br><br>**C. Control of Nitrogen Oxides**<br>The Permittee shall develop and maintain an operating and maintenance plan to minimize $NO_x$. **[Reference: COMAR 26.11.09.08F(1)(b)]** |
| 2.4 | **Record Keeping Requirements:**<br><br>**NOTE:** All records must be maintained for a period of 5 years. **[Reference: COMAR 26.11.03.06.C(5)(g)]**<br><br>**A. Control of Visible Emissions**<br>The Permittee shall: (1) Maintain an operation manual and prevention maintenance plan on site; (2) Maintain a record of the maintenance preformed that relates to combustion performance; (3) Maintain a log of visible emissions observations performed and make it available to the Department's representative upon request; (4) Maintain a record of the |

| Table IV – 2 | |
|---|---|
| | hours that No. 2 fuel oil is burned. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. <u>Control of Sulfur Oxides</u>**<br>The Permittee shall maintain records of fuel supplier's certification and shall make records available to the Department upon request. **[Reference: COMAR 26.11.03.06C]**<br><br>**C. <u>Control of Nitrogen Oxides</u>**<br>The Permittee shall maintain:<br>1) Records of maintenance performed that relates to combustion performance in keeping with the requirements of an operations and maintenance plan. **[Reference: COMAR 26.11.09.08F (1)(c)]**<br>2) Record of training program attendance for each operator. **[Reference: COMAR 26.11.09.08F (1)(e)]**<br>3) An operations manual and preventive maintenance plan. **[Reference: COMAR 26.11.09.08F (1) (b)]**<br>4) Records of fuel use that demonstrate that the boiler meets the definition of a space heater. **[Reference: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C]** |
| **2.5** | **<u>Reporting Requirements</u>:**<br><br>**A. <u>Control of Visible Emissions</u>**<br>The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations".<br><br>**B. <u>Control of Sulfur Oxides</u>**<br>The Permittee shall report fuel supplier certification to the Department upon request. **[Reference: COMAR 26.11.09.07C]**<br><br>**C. <u>Control of Nitrogen Oxides</u>**<br>The Permittee shall submit: a record of training program attendance for each operator to the Department upon request. **[Reference: COMAR 26.11.09.08F(1)(e)]** |

**"A permit shield shall cover the applicable requirements identified for the emission unit(s) listed in the table above."**

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| Table IV – 3 | |
|---|---|
| **3.0** | **<u>Emissions Unit Number(s): Boilers – NSPS and NESHAP</u> – EU03** |

| Table IV – 3 | |
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| | **MDE Reg. Nos. 4-0824 & 4-0825**<br><br>Two (2) 15 MMBtu/hr heat input (Vapor Power International Steam Generator), natural gas/No. 2 fuel oil fired boilers. |
| **3.1** | **Applicable Standards/Limits:**<br><br>**A. Control of Visible Emissions**<br>**COMAR 26.11.09.05A** – Fuel Burning Equipment.<br>"**(2)**Areas III and IV. In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.<br><br>**(3) Exceptions**. Section A(1) and (2) of this regulation do not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if:<br>(c) The visible emissions are not greater than 40 percent opacity; and<br>(d) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period."<br><br>**40 CFR 60, Subpart Dc** – New Source Performance Standard (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units.<br>The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, **40 CFR 60, Subpart Dc**, which contains the following:<br>**§60.43c** – "(c) On and after the date on which the initial performance test is completed or required to be completed under Sec. 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.<br>(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction."<br><br>*Note: Compliance with the "No Visible Emissions" requirement of COMAR 26.11.09.05A(2) will be used to show compliance with this NSPS standard.* |

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**B. Control of Sulfur Oxides**

**COMAR 26.11.09.07A (2)** – Sulfur Content Limitations for Fuel.
"A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: In Areas III and IV: (b) Distillate fuel oils, 0.3 percent."

The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9, 1989, 40 CFR 60, Subpart Dc, which contains the following:
**§60.42c** – Standard for sulfur dioxide
"(**d)** On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain $SO_2$ in excess of 215 ng/J (0.50 lb/million Btu) heat input; or an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater that 0.5 percent weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph."

*Note: The monitoring, record keeping, and reporting requirements under NSPS Subpart Dc will be used to demonstrate compliance with COMAR 26.11.09.07A and the NSPS sulfur in fuel standard.*

**C. Control of Nitrogen Oxides**

**COMAR 26.11.09.08B(5) –** Operator Training.
(a) For purposes of this regulation, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation.
(b) The operator training course sponsored by the Department shall include an in-house training course that is approved by the Department."

**COMAR 26.11.09.08F –** Requirements for Space Heaters.
"(1) A person who owns or operates a space heater as defined in Regulation .01B of this chapter shall:
(a) Submit to the Department a list of each affected installation on the premises and the types of fuel used in each installation;

| Table IV – 3 | |
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| | (b) Develop an operating and maintenance plan to minimize $NO_x$ emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience;<br>(c) Implement the operating and maintenance plan and maintain the plan at the premises for review upon request by the Department;<br>(d) Require installation operators to attend in-State operator training programs once every 3 years on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and<br>(e) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request.<br>(2) A person who owns or operates an installation that no longer qualifies as a space heater shall inform the Department not later than 60 days after the date when the fuel-burning equipment did not qualify, and shall meet the applicable fuel-burning equipment RACT requirement in this regulation." |
| **3.2** | **<u>Testing Requirements</u>:**<br><br>**A. <u>Control of Visible Emissions</u>**<br>See Monitoring Requirements, Condition 4.3 below.<br><br>**B. <u>Control of Sulfur Oxides</u>**<br>**§60.44c(h) – <u>Compliance and performance test methods and procedures for sulfur dioxide</u>**<br>"For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable."<br><br>**C. <u>Control of Nitrogen Oxides</u>**<br>The Permittee shall perform a combustion analysis once a year. **[Reference: COMAR 26.11.09.08E(2)]** |
| **3.3** | **<u>Monitoring Requirements</u>:**<br><br>**A. <u>Control of Visible Emissions</u>**<br>The Permittee shall: (1) Properly operate and maintain the boilers in a manner to prevent visible emissions; and (2) Verify no visible emissions when burning No. 2 fuel oil. The Permittee shall perform a visual |

| Table IV – 3 | |
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| | observation for a 6-minute period once for each 168 hours that the boiler burns oil. **Note**: *[if No. 2 fuel oil is not burned in a year, then no visual observation is required*].<br>The Permittee shall perform the following, if emissions are visible: (1) Inspect combustion control system and boiler operations, (2) Perform all necessary adjustments and/or repairs to the boiler within 48 hours, so that visible emissions are eliminated; (3) Document in writing the results of the inspections, adjustments and/or repairs to the boiler; and (4) After 48 hours, if the required adjustments and/or repairs had not eliminated the visible emissions, perform Method 9 observations once daily for 18 minutes until corrective actions have eliminated the visible emissions. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. Control of Sulfur Oxides**<br>**§60.46c** – Emission monitoring for sulfur dioxide.<br>"(**e**) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the $SO_2$ standards based on fuel supplier certification, as described under §60.48c(f)(1), (2) or (3), as applicable."<br><br>**C. Control of Nitrogen Oxides**<br>The Permittee shall develop and maintain an operating and maintenance plan to minimize $NO_x$. **[Reference: COMAR 26.11.09.08F(1)(b)]** |
| **3.4** | **Record Keeping Requirements:**<br><br>**NOTE:** All records must be maintained for a period of 5 years. **[Reference: COMAR 26.11.03.06.C(5)(g)]**<br><br>**A. Control of Visible Emissions**<br>The Permittee shall:<br>(1) Maintain an operation manual and prevention maintenance plan on site;<br>(2) Maintain a record of the maintenance performed that relates to combustion performance;<br>(3) Maintain a log of visible emissions observations performed and make it available to the Department's representative upon request;<br>(4) Maintain a record of the hours that No. 2 fuel oil is burned. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. Control of Sulfur Oxides**<br>**§60.48c** – Reporting and record keeping requirements. |

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| | "(e)(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2) or (3) of this section as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period."<br><br>"(**f**) Fuel supplier certification shall include the following information:<br>(1) For distillate oil:<br>(i) The name of the oil supplier; and<br>**(ii)** A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c."<br><br>**C. <u>Control of Nitrogen Oxides</u>**<br>The Permittee shall maintain:<br>(1) Records of maintenance performed that relates to combustion performance in keeping with the requirements of an operations and maintenance plan. **[Reference: COMAR 26.11.09.08F(1)(c)]**<br><br>(2) Record of training program attendance for each operator. **[Reference: COMAR 26.11.09.08F(1)(e)]**<br><br>(3) An operations manual and preventive maintenance plan. **[Reference: COMAR 26.11.09.08F(1)(b)]**<br><br>(4) Records of fuel use that demonstrate that the boiler meets the definition of a space heater. **[Reference: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C]** |
| **3.5** | **<u>Reporting Requirements</u>:**<br><br>**A. <u>Control of Visible Emissions</u>**<br>The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations".<br><br>**B. <u>Control of Sulfur Oxides</u>**<br>**§**60**.48c** – <u>Reporting and record keeping requirements</u>.<br>"(**j**) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the |

| Table IV – 3 | |
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| | reporting period."<br><br>**C. Control of Nitrogen Oxides**<br>The Permittee shall submit: a record of training program attendance for each operator to the Department upon request. **[Reference: COMAR 26.11.09.08F(1)(e)]** |

**"A permit shield shall cover the applicable requirements identified for the emission unit(s) listed in the table above."**

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| **4.0** | **Emissions Unit Number(s): Heat Recovery Steam Generators – EU04**<br><br>**MDE Reg. Nos. 9-0889, 9-0891, 9-0892 & 9-1185**<br><br>Four (4) 1,057 kW (1,468 Hp) GE Jenbacher 320 dual (landfill & natural gas) fired, lean-burn, electric-generating engines, equipped with heat recovery steam generators (HRSG).<br><br>**Note**: For the purpose of this permit, a landfill gas (LFG) fired engine is defined as an engine that fires LFG at 10 percent or more of the gross heat input on an annual basis. |
| **4.1** | **Applicable Standards/Limits:**<br><br>**A. Control of Visible Emissions**<br>**COMAR 26.11.09.05E –** Visible Emissions Limits for Stationary Internal Combustion Engine Powered Equipment.<br><br>"(1) Definitions. For the purpose of this section:<br><br>(a) "Idle" means the condition during which the engine is not performing the useful net work that enables the piece of equipment to accomplish its designated purpose.<br><br>(b) "Internal combustion engine" (hereafter "engine") means all engines except those used for propulsion of ships or vehicles licensed to operate upon the public highway within the State, or engines employed solely for agricultural and recreational purposes unless they are an integral part of a stationary installation. |

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(2) Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(3) Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(4) Exceptions.

(a) Section E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(b) Section E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
(i) Engines that are idled continuously when not in service: 30 minutes;
(ii) All other engines: 15 minutes.

(c) Section E(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics."

**B. <u>Control of Nitrogen Oxides</u>**

**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines >25 HP [Except gasoline and rich burn LPG engines]:

**NOx = 3.0 g/Hp-hr/220 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr / 160 ppmvd at 15% $O_2$ (Natural Gas)**

The following emission limitations shall apply for MDE Reg. No. 9-1185, only:
**NOx: 2.0 g/Hp-hr/150 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr/82 ppmvd at 15% $O_2$ (Natural Gas)**

**C. <u>Control of Carbon Monoxide</u>**

**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines >25 HP [Except gasoline and rich burn LPG engines]:

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| | **CO = 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 4.0 g/Hp-hr / 540 ppmvd at 15% $O_2$ (Natural Gas)**<br><br>The following emission limitations shall apply for MDE Reg. No. 9-1185, only:<br>**CO: 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr/270 ppmvd at 15% $O_2$ (Natural Gas)**<br><br>**D. <u>Control of VOC (equivalent to NMHC)</u>**<br>**40 CFR 60 Subpart JJJJ – Table 1 -** NOx, NMHC, and CO Emission Standards in g/HP-hr for Stationary SI Engines >25 HP [Except gasoline and rich burn LPG engines]:<br><br>**VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr / 86 ppmvd at 15% $O_2$ (Natural Gas)**<br><br>The following emission limitations shall apply for MDE Reg. No. 9-1185, only:<br>**VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 0.7 g/Hp-hr / 60 ppmvd at 15% $O_2$ (Natural Gas)**<br><br>**[Reference: 40 CFR 60 Subpart JJJJ, Section 60.4233(e)]**<br><br>**E. <u>Operational Limitation (NOx Synthetic Minor)</u>**<br>In order to exempt the four (4) 1,057 kW, GE Jenbacher 320 engine/generators generators from the requirements of COMAR 26.11.17 - Requirements for Major New Sources and Modifications, and prevent the engine sets from operating as a "Major Modification" with a "significant net emissions increase of VOC or NOx as defined under COMAR 26.11.17.01B, the Permittee shall limit the NOx and VOC emissions from the four (4) landfill-gas fired generator sets to less than 25 tons per year, for any 12-month consecutive period. **[Reference: PTC 003-0316-9-0889, 9-0891, 9-0892 & 9-1185 – Part D Operating Conditions]**<br><br>**F. <u>Control of Hazardous Air Pollutants – 40 CFR 63, Subpart ZZZZ</u>**<br>***§ 63.6590 What parts of my plant does this subpart cover?***<br><br>"This subpart applies to each affected source.<br>(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. |

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| | (2) New stationary RICE.<br>(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.<br><br>(c) Stationary RICE subject to Regulations under 40 CFR, Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR, Part 60, Subpart IIII, for compression ignition engines or 40 CFR, Part 60, Subpart JJJJ, for spark ignition engines. **No further requirements apply for such engines under this part**.<br><br>(1) A new or reconstructed stationary RICE located at an area source."<br><br>**[Amendment(s) published August 20, 2010, in 75 FR 51588; Effective Date(s): October 19, 2010]** |
| **4.2** | **Testing Requirements:**<br><br>**A. Control of Visible Emissions**<br>See Monitoring Requirements<br><br>**B. Control of Nitrogen Oxides**<br>(1) The Permittee shall in accordance with **40 CFR § 60.8**, conduct performance tests as follows:<br><br>(a) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator (the Department) a written report of the results of such performance test(s).<br><br>(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Administrator specifies or approves, in specific cases, an alternative reference method.<br><br>(c) The Permittee shall provide the Department at least 30 days prior notice of any performance test, except as |

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| | specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator (the Department) as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator (the Department) by mutual agreement. **[Reference: 40 CFR § 60.8]**<br><br>(2) The Permittee shall conduct an initial performance test to demonstrate compliance with the emission standards specified in Table 1 to this subpart and according to the requirements specified in Sec.60.4244, as applicable. If you are an owner or operator of a stationary SI internal combustion engine that is greater than 500 HP, you must also conduct subsequent performance tests *every 3 years or 8,760 hours of operation, whichever comes first*. **[Reference: 40 CFR § 60.4243(b)(2)(ii)]**<br><br>(3) **§ 60.4244 - What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?**<br>"Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.<br><br>(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.<br><br>(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.<br><br>(c) You must conduct three separate test runs for each |

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performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(d) To determine compliance with the $NO_X$ mass per unit output emission limitation, convert the concentration of $NO_X$ in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912\times10^{-3} \times Q \times T}{HP\text{-}hr} \qquad \text{Eq. 1}$$

Where:

ER = Emission rate of $NO_X$ in g/HP-hr.

$C_d$ = Measured $NO_X$ concentration in parts per million by volume (ppmv).

$1.912\times10^{-3}$ = Conversion constant for ppm $NO_X$ to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164\times10^{-3} \times Q \times T}{HP\text{-}hr} \qquad \text{Eq. 2}$$

Where:

ER = Emission rate of CO in g/HP-hr.

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$C_d$ = Measured CO concentration in ppmv.

$1.164 \times 10^{-3}$ = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP\text{-}hr} \qquad \text{Eq. 3}$$

Where:

ER = Emission rate of VOC in g/HP-hr.

$C_d$ = VOC concentration measured as propane in ppmv.

$1.833 \times 10^{-3}$ = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR, Part 60, appendix A, or Method 320 of 40 CFR, Part 63, appendix A, then it has the option of correcting the measured VOC emissions to

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account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \qquad \text{Eq. 4}$$

Where:

$RF_i$ = Response factor of compound i when measured with EPA Method 25A.

$C_{Mi}$ = Measured concentration of compound i in ppmv as carbon.

$C_{Ai}$= True concentration of compound i in ppmv as carbon.

$$Ci_{corr} = RF_i \times Ci_{meas} \qquad \text{Eq. 5}$$

Where:

$Ci_{corr}$= Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

$Ci_{meas}$= Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times Ci_{corr} \qquad \text{Eq. 6}$$

Where:

$C_{Peq}$ = Concentration of compound i in mg of propane equivalent per DSCM."

**C. <u>Control of Carbon Monoxide</u>**
See above condition 4.2B

| Table IV – 4 | |
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| | **D. Control of VOC (equivalent to NMHC)**<br>See above condition 4.2B<br><br>**E. Operational Limitation (NOx Synthetic Minor)**<br>See Monitoring Requirements<br><br>**F. Control of Hazardous Air Pollutants**<br>Compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart ZZZZ.<br>**{See Compliance requirements for Control of Nitrogen Oxides, above.}** |
| **4.3** | **Monitoring Requirements:**<br>**A. Control of Visible Emissions**<br>See Recording Keeping Requirements<br><br>**B. Control of Nitrogen Oxides**<br>See Recording Keeping Requirements<br><br>**C. Control of Carbon Monoxide**<br>See Recording Keeping Requirements<br><br>**D. Control of VOC (equivalent to NMHC)**<br>See Recording Keeping Requirements<br><br>**E. Operational Limitation (NOx Synthetic Minor)**<br>The Permittee shall monitor and log the monthly fuel use, fuel type and hours of operation of each IC engine generator set. **[Reference: COMAR 26.11.03.06C]**<br><br>**F. Control of Hazardous Air Pollutants**<br>Compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart ZZZZ.<br>**{See Compliance requirements for Control of Nitrogen Oxides, above.}** |
| **4.4** | **Record Keeping Requirements:**<br>**A. Control of Visible Emissions**<br>See below condition 4.4B |

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**B. Control of Nitrogen Oxides**

The Permittee shall:

(1) Maintain the records and the results of all emissions testing performed on the landfill gas-fired electric-generating engines as required under 40 CFR § 60.4243 (c)(2). **[Reference: 40 CFR § 60.4243 (b)(2)(ii)]**

(2) **§ 60.4245 - What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?**

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

"(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards."

"(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

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(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed."

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]

**[Reference: 40 CFR § 60.4245]**
**NOTE: This requirement has been fulfilled**

(3) Maintain an operations manual and maintenance plan on site. **[Reference: COMAR 26.11.03.06C]**

**C. <u>Control of Carbon Monoxide</u>**
See above condition 4.4B

**D. <u>Control of VOC (equivalent to NMHC)</u>**
See above condition 4.4B

**E. <u>Operational Limitation (NOx Synthetic Minor)</u>**
In order to demonstrate compliance with the emissions limitations requirement for exemption from NSR, the Permittee shall calculate and record the emissions from the four (4) landfill-gas fired, 1,057 kW, GE Jenbacher 320 engine/generators generators, for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly, within the first 15 days of each following month. The results of the calculations and logs shall be maintained on site and made available to the Department upon request. **[Reference: COMAR 26.11.03.06C & PTC 003-0316-9-0889 through 9-0892, and 9-1198]**

**F. <u>Control of Hazardous Air Pollutants</u>**
Compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart

| Table IV – 4 | |
|---|---|
| | *ZZZZ*.<br>**{See Compliance requirements for Control of Nitrogen Oxides, above.}** |
| **4.5** | **<u>Reporting Requirements</u>:**<br>**A. <u>Control of Visible Emissions</u>**<br>The Permittee must report all violations of visible emissions and submit maintenance records upon request. **[Reference: COMAR 26.11.03.06C]**<br><br>**B. <u>Control of Nitrogen Oxides</u>**<br>The Permittee shall provide the Department with two copies of the test protocols at least 30 days prior to any scheduled performance tests. The Permittee shall submit to the Department the stack test report within 60-days following completion of the tests. **[Reference: 40 CFR § 60.4243 (b)(2) and COMAR 26.11.03.06C]**<br><br>**C. <u>Control of Carbon Monoxide</u>**<br>The Permittee must report all violations of excess emissions and submit maintenance records upon request. **[Reference: COMAR 26.11.03.06C]**<br><br>**D. <u>Control of VOC (equivalent to NMHC)</u>**<br>The Permittee must report all violations of excess emissions and submit maintenance records upon request. **[Reference: COMAR 26.11.03.06C]**<br><br>**E. <u>Operational Limitation (NOx Synthetic Minor)</u>**<br>The Permittee shall submit along with the required semi-annual compliance reports (Ref: Section III, 4 d.) a summary report verifying that the Synthetic Minor Limitation for NOx was not exceeded for the IC engine generator sets. **[Reference: COMAR 26.11.03.06C & PTC 003-0316-9-0889 through 9-0892]**<br><br>**F. <u>Control of Hazardous Air Pollutants</u>**<br>Compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart *ZZZZ*.<br>**{See Compliance requirements for Control of Nitrogen Oxides, above.}** |

**"A permit shield shall cover the applicable requirements identified for the emission unit(s) listed in the table above."**

## SECTION V INSIGNIFICANT ACTIVITIES

This section provides a list of insignificant emissions units that were reported in the Title V permit application. The applicable Clean Air Act requirements, if any, are listed below the insignificant activity.

(1) No. 9 Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour;

**[For Areas III and IV]**

The fuel burning equipment are subject to the following requirements:

COMAR 26.11.09.05A(2), which establishes that the Permittee may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.

Exceptions: COMAR 26.11.09.05A(2) does not apply to emissions during load changing, soot blowing, start-up, or adjustments or occasional cleaning of control equipment if:

(a) The visible emissions are not greater than 40 percent opacity; and

(b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period.

**[For Distillate Fuel Oil]**

COMAR 26.11.09.07 A(2)(b), which establishes that the Permittee may not burn, sell, or make available for sale any distillate fuel with a sulfur content by weight in excess of 0.3 percent.

(2) No. 13 Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

The engines are subject to the following requirements:

(A) COMAR 26.11.09.05E(2), Emissions During Idle Mode: The Permittee may not cause or permit the discharge of

emissions from any engine, operating at idle, greater than 10 percent opacity.

(B) COMAR 26.11.09.05E(3), Emissions During Operating Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(C) Exceptions:

(i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(ii) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(a) Engines that are idled continuously when not in service: 30 minutes
(b) all other engines: 15 minutes.

(iii) COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair or testing is being performed by qualified mechanics.

(D) COMAR 26.11.36.03A(1), which establishes that the Permittee may not operate an emergency generator except for emergencies, testing, and maintenance purposes.

(E) COMAR 26.11.36.03A(5), which establishes that the Permittee may not operate an emergency generator for testing and engine maintenance purposes between 12:01 a.m. and 2:00 p.m. on any day on which the Department forecasts that the air quality will be a code orange, code red, or code purple unless the engine fails a test and engine maintenance and a re-test are necessary.

(3) ✓ Space heaters utilizing direct heat transfer and used solely for comfort heat;

(4) ✓ Equipment for drilling, carving, cutting, routing, turning, sawing, planing, spindle sanding, or disc sanding or wood or wood products;

(5) ✓ Equipment for washing or drying products fabricated from metal or glass, provided that no NOV is used in the process and that no oil or solid fuel is burned;

(6) ✓ Brazing, soldering, or welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals and not directly related to plant maintenance, upkeep and repair or maintenance shop activities;

(7) Containers, reservoirs, or tanks used exclusively for:

(a) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas;

(b) No. 35 Storage of lubricating oils;

(c) No. 16 Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel;

(d) No. 2 Storage of motor vehicle gasoline and having individual tank capacities of 2,000 gallons (7.6 cubic meters) or less;

(e) No. varies The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;

*No storage of these products in drums or tanks, however the facility does store products such as thinners in smaller (typically 1-5 gallon) containers*

(8) ✓ Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;

(9) ✓ First aid and emergency medical care provided at the facility, including related activities such as sterilization and medicine preparation used in support of a manufacturing or production process;

(10) ✓ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

(11) ✓ Comfort air conditioning subject to requirements of Title VI of the Clean Air Act;

(12) ✓ Non-contact water (i.e., water that has not been in direct contact with process fluids) cooling towers except as regulated under Section 112 of the Clean Air Act;

(13) ✓ Natural draft hoods or natural draft ventilators that exhaust air pollutants into the ambient air from manufacturing/industrial or commercial processes;

(14) any other emissions unit, not listed in this section, with a potential to emit less than the "de minimus" levels listed in COMAR 26.11.02.10X (list and describe units):

No. 1 Degreasing operation using heated KOH, stored in 3,000 gallon AST in Building 5.

No. 1 Spray can painting operations in various locations at the facility, including, but not limited to: Buildings 40B and 66.

No. 1 Abrasive blasting and surface preparation operations in various locations at the facility. Locations include, but are not limited to: Buildings 5, 5A, 8, 8A, 11, 34, 35, 40, 40B, 42, 58, and 78, as well as alongside piers and bulkheads, vessels in dry dock, ship-lift, and vessels hauled-out on land.

No. 1 Equipment/part painting operations in Building 11.

(15) any other emissions unit at the facility which is not subject to an applicable requirement of the Clean Air Act (list and describe):

No. 1 Marine engine/dynamometer test cell in Building 91

No. 2 Refrigeration recovery operation in Building 8, and Building 12

No. ✓ Refrigeration recovery operation from ships reconditioned or serviced

No. ✓ Mobile Sources (including, but not limited to): Passenger vehicles, Fleet vehicles, Rail Cranes, Non-road vehicles, Marine vessels

## SECTION VI STATE-ONLY ENFORCEABLE CONDITIONS

The Permittee is subject to the following State-only enforceable requirements:

1. Applicable Regulations:

   **COMAR 26.11.06.08 –** Nuisance**. "**An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution."

   **COMAR 26.11.06.09** – Odors. "A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that nuisance or air pollution is created."

   **Toxic Requirements**
   **COMAR 26.11.15.05,** which requires the installation and operation of T-BACT for new installations or sources discharging a toxic air pollutant to the atmosphere.

   **COMAR 26.11.15.06**, states that new sources or installations must comply with the allowable emissions of toxic air pollutants. Existing sources of installation must demonstrate compliance with the list of toxic air pollutants for existing sources.

2. Record Keeping and Reporting:

   The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. The analysis shall include either:

   (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

   (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.

# Part 70 Operating Permit Renewal Application
# United States Coast Guard Yard
# Baltimore, Maryland

Submitted to:

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard

Baltimore, Maryland 21230

410-537-3000

Submitted by:

UNITED STATES COAST GUARD YARD

2401 Hawkins Point Road

Baltimore, Maryland 21226

SCS ENGINEERS

SCS File No. 02207056.00 | November 2019

SCS Engineers
www.scsengineers.com
(800) 767-4727

# Table of Contents



## Appendices

# 1 INTRODUCTION

This document addresses the requirements of the Maryland Department of the Environment (MDE) Part 70 Permit Application for Renewal as they apply to the United States Coast Guard Yard (the Yard) located in Baltimore, Maryland.

The United States Coast Guard Yard was issued its current Part 70 air operating Permit on December 1, 2015. This permit expires on November 30, 2020.

## RENEWAL APPLICATION STRUCTURE

The Yard operates several sources of air emissions at its facility, including:

- One 65 MMBtu/hr boiler;
- Two 15 MMBtu/hr boilers;
- Four dual fuel natural gas (NG)/landfill gas (LFG) fired internal combustion (IC) engines; and
- Painting and surface coating operations.

The Yard also operates a number of other smaller emission sources that are considered Insignificant Activities, including but not limited to the following: small boilers, engines, storage tanks, part degreasing, abrasive blasting and surface preparation operations, spray painting operations, and emergency power generators.

Section 2 of this application contains the MDE Part 70 Permit Application for Renewal. Several appendices are included in this application to provide additional supporting information, including a Site Map, the 2018 MDE Emission Certification Report, and the Permit to Construct (Reg. No. 9-1185).

## SUMMARY OF REQUESTED CHANGES

The following changes are being requested during this permit renewal:

- Removal of EU-02 – Emission Point 2 (Reg. No. 4-0746), one Burnham Commercial B9A natural gas fired boiler rated at 3 MMBtu/hr heat input. This boiler was decommissioned in October 2015. Thus, the previous conditions are obsolete and can be removed from the permit.
- Replacement of EU-04 – Emission Point 2, Engine #2 (Reg. No. 9-0890), one 1,057 kw GE Jenbacher 320 landfill or natural gas-fired electric-generating engine (1468 brake horsepower), equipped with heat recovery steam generator, with an identical unit (Reg. No. 9-1185) in October 2019.

# 2 APPLICATION FORMS

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**
1800 Washington Boulevard ● Baltimore MD 21230
(410) 537-3000 ● 1-800-633-6101 ● http://www.mde.state.md.us

# PART 70 PERMIT APPLICATION FOR RENEWAL

AIR AND RADIATION MANAGEMENT ADMINISTRATION

Facilities required to obtain a Part 70 permit under COMAR 26.11.03.01 must complete and return this form. Applications are incomplete unless all applicable information required by COMAR 26.11.03.03 and 26.11.03.13 is supplied. Failure to supply additional information required by the Department to enable it to act on the application may result in loss of the application shield and denial of this application.

**Owner and Operator:**

| | | |
|---|---|---|
| Name of Owner or Operator:<br>**United States Coast Guard Yard** | | |
| Street Address:<br>**2401 Hawkins Point Road** | | |
| City:<br>**Baltimore** | State:<br>**MD** | Zip Code:<br>**21226-1797** |
| Telephone Number<br>**(410) 636-7070** | | Fax Number<br>**(410) 636-7692** |

**Facility Information:**

| | | |
|---|---|---|
| Name of Facility:<br>**United States Coast Guard Yard** | | |
| Street Address:<br>**2401 Hawkins Point Road** | | |
| City:<br>**Baltimore** | State:<br>**MD** | Zip Code:<br>**21226-1797** |
| Plant Manager:<br>**LCDR John Adams, PE** | Telephone Number:<br>**(410) 636-4097** | Fax Number:<br>**(410) 636-7692** |
| 24-Hour Emergency Telephone Number for Air Pollution Matters:<br>**(410) 636-3993 [Front Gate]** | | |

**List, on a separate page, the names and telephone numbers of other facility owners and persons with titles.**

## SECTION 1. CERTIFICATION STATEMENTS

### 1. Compliance Status with Applicable Enhanced Monitoring and Compliance Certification Requirements

The emissions units identified in this application are in compliance with applicable enhanced monitoring and compliance certification requirements.

### 2. Certification of Current Compliance with All Applicable Federally Enforceable Requirements

Except for the requirements identified in Section 7 of this application, for which compliance is not achieved, I hereby certify, based on information and belief formed after reasonable inquiry, that the facility is currently in compliance with all applicable federally enforceable requirements and agree that the facility will continue to comply with those requirements during the permit term.

**You must complete a Section 7 form for each non-complying emissions unit.**

### 3. Statement of Compliance with Respect to All New Applicable Requirements Effective During the Permit Term

I hereby state, based on information and belief formed after reasonable inquiry, that the facility agrees to meet, in a timely manner, all applicable federally enforceable requirements that become effective during the permit term, unless a more detailed schedule is expressly required by the applicable requirement.

### 4. Risk Management Plan Compliance

I hereby certify that, based on information and belief formed after reasonable inquiry, that a Risk Management Plan as required under 112(r) of the Clean Air Act:

[ ] has been submitted;

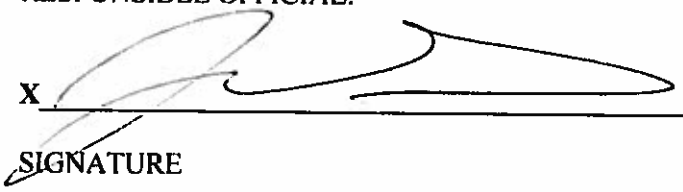
[ ] will be submitted at a future date; or

[**X**] does not need to be submitted.

**5. Statement of Truth, Accuracy, and Completeness**

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision and in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

RESPONSIBLE OFFICIAL:

X  10/17/19

SIGNATURE DATE

**LCDR John Adams, PE**
PRINTED NAME

**Facility Engineer**
TITLE

## SECTION 2. FACILITY DESCRIPTION SUMMARY

### 1. Major Activities of Facility

Briefly describe the major activities, including the applicable SIC Code(s) and end product(s).

The United States Coast Guard Yard at Curtis Bay, Maryland, operates under the U.S. Department of Homeland Security and is responsible for refurbishing, repairing, servicing, fabricating, and assembling various Coast Guard, Federal, State, and Local Government marine vessels, equipment, and aids to navigation (buoys).

These operations include various sources of air emissions at the facility, including: one 65 MMBtu/hr boiler, two 15 MMBtu/hr boilers, four dual fuel natural gas (NG) and landfill gas (LFG) fired internal combustion (IC) engines, as well as engine painting, surface coating and fiberglass fabrication operations.

The Yard also operates a number of other smaller emission sources that are considered Insignificant Activities, including but not limited to the following: small boilers, engines, storage tanks, part degreasing, small painting operations, abrasive blasting, and emergency power generators.

The primary SIC codes for the facility are 9711 (national security), 3731 (ship building and repairing) and 3732 (boat building and repairing).

### 2. Facility-Wide Emissions

A. This facility is required to obtain a Part 70 Operating Permit because it is:
Check appropriate box:

**[X]** Actual Major
[] Potential Major
[] Solid Waste Incineration Unit Requiring Permit Under §129(e) of CAA

B. List the actual facility-wide emissions below **(Source 2018 ECR):**

PM10 0.1 tpy NOx 17.1 tpy VOC 24.1 tpy SOx 2.3 tpy CO 60.9 tpy HAPs 7.8

### 3. Include With the Application:

Flow Diagrams showing all emissions units, emission points, and control devices. ***(See Appendices for Facility Map)***
Emissions Certification Report (copy of the most recent submitted to the Department.) ***(See Appendices for 2018 Emissions Certification Report)***

## SECTION 3A. EMISSIONS UNIT DESCRIPTIONS

| 1. Emissions Unit No.: **EU01: Painting and Surface Coating**<br><br>1a. Date of installation (month/year):<br>**Emission Point #1: 1943, Consolidated in 2004**<br>**Emission Point #2: 1978, Relocated in 2004** | 2. MDE Registration No.:(if applicable)<br>**Emission Point #1: 6-0902**<br>**Emission Point #2: 6-0903** |
|---|---|

3. Detailed description of the emissions unit, including all emission point(s) and the assigned number(s):

The emission unit includes various painting and surface coating operations at the Yard (resulting in the emission of VOCs and HAPs), including the following emission points (consolidated by general operation type):

**Emission Point #1:** *Engine Painting and Surface Coating* operations in multiple locations, including but not limited to Buildings: 90, 32, 40, 78 and 5, and along piers, bulkheads, ship-lifts, vessels in dry dock and on land, and various temporary locations.

**Emission Point #2:** *Fiberglass Application* operation located in Building 32
Fiberglass operations involve repair of propeller shafts with fiberglass wrapping to prevent corrosion of the shafts. Various VOC-containing liquid coatings (e.g., styrene) are utilized during this repair process, as necessary.

4. Federally Enforceable Limit on the Operating Schedule for this Emissions Unit:

General Reference: **Not Applicable**

Continuous Processes: _____ hours/day _____ days/year

Batch Processes: _____ hours/batch _____ batches/day

5. Fuel Consumption:

| Type(s) of Fuel | % Sulfur | Annual Usage (specify units) |
|---|---|---|
| 1. **Not Applicable** | | |
| 2. | | |
| 3. | | |

6. Emissions in Tons (from 2018 Emission Certification Report):

A. Actual Major: **X**. Potential Major:_____ (note: before control device)

B. Actual Emissions: **NOx** N/A **SOx** N/A **VOC** 17.8 **PM10** N/A **HAPs** 4.95

**3A-1**

## SECTION 3A. EMISSIONS UNIT DESCRIPTIONS

| 1. Emissions Unit No.: **EU02: Boiler (Non-NSPS)**<br><br>1a. Date of installation (month/year):<br>**Emission Point #1: 1981 (modified 2009 per 003-9-0889-0892)** | 2. MDE Registration No.:(if applicable)<br>**Emission Point #1: 5-0497** |
|---|---|

3. Detailed description of the emissions unit, including all emission point(s) and the assigned number(s):

The emission unit includes the following emission points:

**Emission Point #1:** *Boiler 15-3,* 65 MMBtu/hr Keeler DS-55 boiler.
This boiler is classified as a space heater and is fitted to operate using one of three fuels: natural gas, No. 2 fuel, or landfill gas.

4. Federally Enforceable Limit on the Operating Schedule for this Emissions Unit:

General Reference: **Not Applicable**

Continuous Processes: _____ hours/day _____ days/year

Batch Processes: _____ hours/batch _____ batches/day

5. Fuel Consumption:

| Type(s) of Fuel | % Sulfur | Annual Usage (specify units) |
|---|---|---|
| **Emission Point #1** | | |
| 1. **Natural Gas** | 0.1 | 9.7 MMCF/yr . |
| 2. **No. 2 Fuel Oil** | 0.3 | 72,304 gal/yr . |
| 3. **Landfill Gas** | <0.1 | 0 MMCF/yr . |

**Fuel consumption annual usage from 2018 emission certification report*

6. Emissions in Tons (from 2018 Emission Certification Report):

A. Actual Major: _____ Potential Major:_____ (note: before control device)

B. Actual Emissions: **NOx** 1.2 **SOx** 1.5 **VOC** 0.1 **PM10** <0.1 **HAPs** <0.1

**3A-2**

## SECTION 3A. EMISSIONS UNIT DESCRIPTIONS

| 1. Emissions Unit No.: **EU03: Boilers (NSPS)**<br><br>1a. Date of installation (month/year):<br>**Emission Point #1: 7/2004**<br>**Emission Point #2: 7/2004** | 2. MDE Registration No.:(if applicable)<br>**Emission Point #1: 4-0824**<br>**Emission Point #2: 4-0825** |
|---|---|

3. Detailed description of the emissions unit, including all emission point(s) and the assigned number(s):

The emission unit includes the following emission points:

**Emission Point #1:** *Boiler 15-5,* 15 MMBtu/hr Vapor Power boiler.
This boiler is classified as a space heater and is fitted to operate using one of two fuels: natural gas and No. 2 fuel oil.

**Emission Point #2:** *Boiler 15-6,* 15 MMBtu/hr Vapor Power boiler.
This boiler is classified as a space heater and is fitted to operate using one of two fuels: natural gas and No. 2 fuel oil.

4. Federally Enforceable Limit on the Operating Schedule for this Emissions Unit:

General Reference: **Not Applicable**

Continuous Processes: _____ hours/day _____ days/year

Batch Processes: _____ hours/batch _____ batches/day

5. Fuel Consumption:

| Type(s) of Fuel | % Sulfur | Annual Usage (specify units) |
|---|---|---|
| **Emission Point #1** | | |
| 1. **Natural Gas** | 0.1 | 0.5 MCF/yr |
| 2. **No. 2 Fuel Oil** | 0.3 | 89 gal/yr |
| **Emission Point #2** | | |
| 1. **Natural Gas** | 0.1 | .8 MCF/yr |
| 2. **No. 2 Fuel Oil** | 0.3 | 20,709 gal/yr |

**Fuel consumption annual usage from 2018 emission certification report*

6. Emissions in Tons (from 2018 Emission Certification Report):

A. Actual Major: _____ Potential Major:_____ (note: before control device)

B. Actual Emissions: **NOx** 0.3 **SOx** 0.4 **VOC** <0.1 **PM10** <0.1 **HAPs** <0.1

**3A-3**

## SECTION 3A. EMISSIONS UNIT DESCRIPTIONS

| 1. Emissions Unit No.: **EU04: NG and LFG-Fired IC Engines**<br><br>1a. Date of installation (month/year):<br>**Installed 4/2009, Engine #2 replaced in 2019** | 2. MDE Registration No.: (if applicable)<br>**9-0889, 9-1185, 9-0891, and 9-0892** |
|---|---|

3. Detailed description of the emissions unit, including all emission point(s) and the assigned number(s):

The emission unit consists of the following emission points:
**Emission Point #1:** *Engine #1.* 1,057 kw GE Jenbacher 320 landfill or natural gas-fired electric-generating engine (1468 brake horsepower), equipped with heat recovery steam generator. Heat input rate of 10 MMBtu/hr.

**Emission Point #2:** *Engine #2.* 1,057 kw GE Jenbacher 320 landfill or natural gas-fired electric-generating engine (1468 brake horsepower), equipped with heat recovery steam generator. Heat input rate of 10 MMBtu/hr.

**Emission Point #3:** *Engine #3.* 1,057 kw GE Jenbacher 320 landfill or natural gas-fired electric-generating engine (1468 brake horsepower), equipped with heat recovery steam generator. Heat input rate of 10 MMBtu/hr.

**Emission Point #4:** *Engine #4.* 1,057 kw GE Jenbacher 320 landfill or natural gas-fired electric-generating engine (1468 brake horsepower), equipped with heat recovery steam generator. Heat input rate of 10 MMBtu/hr.

4. Federally Enforceable Limit on the Operating Schedule for this Emissions Unit:

General Reference: **Limit of NOx and VOC emissions from EU04 to less than 25 tons per year, each, VOCs and NOx.**

Continuous Processes: _____ hours/day _____ days/year

Batch Processes: _____ hours/batch _____ batches/day

5. Fuel Consumption: **(each emission point)**

| Type(s) of Fuel | % Sulfur | Annual Usage (specify units) |
|---|---|---|
| Emission Point #1 | | |
| 1. **Landfill Gas/Natural Gas Total** | **0.1** | **49.7 Mscf/yr .** |
| Emission Point #2 | | |
| 1. **Landfill Gas/Natural Gas Total** | **0.1** | **34.7 Mscf/yr ..** |
| Emission Point #3 | | |
| 1. **Landfill Gas/Natural Gas Total** | **0.1** | **27.2 Mscf/yr ..** |
| Emission Point #4 | | |
| 1. **Landfill Gas/Natural Gas Total** | **0.1** | **44.7 Mscf/yr ..** |

**Fuel consumption annual usage from 2018 emission certification report*

6. Emissions in Tons:

A. Actual Major: _____ Potential Major: X . (note: before control device)

B. Actual Emissions: **NOx** 15.7 **SOx** 0.4 **VOC** 6.2 **PM10 <0.1 HAPs 3.6**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU01: Painting and Surface Coating**
**General Reference:** **40 CFR Part 63, Subpart II**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**

National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

The Permittee shall comply with all applicable requirements of 40 CFR Part 63 of Subpart II.
No changes to the applicable requirements included in the current Title V permit (Section IV, Table IV-1) are requested.

Permit Shield Request: **Yes**

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:** None

**Describe:**

**Testing Reference: 40 CFR 63.786(a) and (c)**

**Describe:** (a) For the compliance procedures described in §63.785(c) (1) through (c)(3), Method 24 of 40 CFR part 60, appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included (c) A coating manufacturer or the owner or operator of an affected source may use batch formulation data as a test method in lieu of Method 24 of appendix A to 40 CFR part 60 to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively known relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon coating formulation data. Notwithstanding such determination, in the event of conflicting results, Method 24 of appendix A of 40 CFR part 60 shall take precedence.

**Recordkeeping Reference: 40 CFR63.788(b)**

**Describe:** (b) Recordkeeping requirements. (1) Each owner or operator of a major source shipbuilding or ship repair facility having surface coating operations with less than 1000 liters (L) (264 gallons (gal)) annual marine coating usage shall record the total volume of coating applied at the source to ships. Such records shall be compiled monthly and maintained for a minimum of 5 years. (2) Each owner or operator of an affected source shall compile records on a monthly basis and maintain those records for a minimum of 5 years. At a minimum, these records shall include: (i) All documentation supporting initial notification; (ii) A copy of the affected source's approved implementation plan; (iii) The volume of each low-usage-exempt coating applied; (iv) Identification of the coatings used, their appropriate coating categories, and the applicable VOHAP limit; (v) Certification of the as-supplied VOC content of each batch of coating; (vi) A determination of whether containers meet the standards as described in §63.783(b)(2); and (vii) The results of any Method 24 of appendix A to 40 CFR part 60 or approved VOHAP measurement test conducted on individual containers of coating, as applied. (3) The records required by paragraph (b)(2) of this section shall include additional information, as determined by the compliance procedure(s) described in §63.785(c) that each affected source followed: (continued on next page…)

**SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS**

**Emissions Unit No.: EU01: Painting and Surface Coating**

**General Reference: 40 CFR Part 63, Subpart II (Continued)**

Methods used to demonstrate compliance:

**Recordkeeping Reference:** 40 CFR 63.788(b) (Continued)

**Describe:** (i) Coatings to which thinning solvent will not be added. The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(1) shall contain the following information: (A) Certification of the as-applied VOC content of each batch of coating; and (B) The volume of each coating applied. (ii) Coatings to which thinning solvent will be added—coating-by-coating compliance. The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(2) shall contain the following information: (A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids (non-volatiles) in each batch, including any calculations; (B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations; (C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5 °C (40 °F) at the time the coating was applied and the volume used of each batch of the coating, as supplied, during these dates; (D) The volume used of each batch of the coating, as supplied; (E) The total allowable volume of thinner for each coating, including calculations; and (F) The actual volume of thinner used for each coating. (iii) Coatings to which the same thinning solvent will be added—group compliance. The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(3) shall contain the following information: (A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids in each batch, including any calculations; (B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations; (C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5 °C (40 °F) at the time the coating was applied and the volume used of each batch in the group, as supplied, during these dates; (D) Identification of each group of coatings and their designated thinners; (E) The volume used of each batch of coating in the group, as supplied; (F) The total allowable volume of thinner for the group, including calculations; and (G) The actual volume of thinner used for the group. (iv) Demonstration of compliance through an alternative (i.e., non-Method 24 in appendix A to 40 CFR part 60) test method. The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(4) shall contain the following information: (A) Identification of the Administrator-approved VOHAP test method or certification procedure; (B) For coatings to which the affected source does not add thinning solvents, the source shall record the certification of the as-supplied and as-applied VOHAP content of each batch and the volume of each coating applied; (C) For coatings to which the affected source adds thinning solvent on a coating-by-coating basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(ii) of this section; and (D) For coatings to which the affected source adds thinning solvent on a group basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(iii) of this section. (4) If the owner or operator of an affected source detects a violation of the standards specified in §63.783, the owner or operator shall, for the remainder of the reporting period during which the violation(s) occurred, include the following information in his or her records: (i) A summary of the number and duration of deviations during the reporting period, classified by reason, including known causes for which a Federally-approved or promulgated exemption from an emission limitation or standard may apply. (ii) Identification of the data availability achieved during the reporting period, including a summary of the number and total duration of incidents that the monitoring protocol failed to perform in accordance with the design of the protocol or produced data that did not meet minimum data accuracy and precision requirements, classified by reason. (iii) Identification of the compliance status as of the last day of the reporting period and whether compliance was continuous or intermittent during the reporting period. (iv) If, pursuant to paragraph (b)(4)(iii) of this section, the owner or operator identifies any deviation as resulting from a known cause for which no Federally-approved or promulgated exemption from an emission limitation or standard applies, the monitoring report shall also include all records that the source is required to maintain that pertain to the periods during which such deviation occurred and: (A) The magnitude of each deviation; (B) The reason for each deviation; (C) A description of the corrective action taken for each deviation, including action taken to minimize each deviation and action taken to prevent recurrence; and (D) All quality assurance activities performed on any element of the monitoring protocol.

**SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS**

**Emissions Unit No.: EU01: Painting and Surface Coating**
**General Reference: 40 CFR Part 63, Subpart II (Continued)**

Methods used to demonstrate compliance:

**Reporting Reference: 40CRF 63.788 (c)**

**Describe:** Reporting requirements. Before the 60th day following completion of each 6-month period after the compliance date specified in §63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b) (2) through (3) of this section, except for that information specified in paragraphs (b)(2) (i) through (ii), (b)(2)(v), (b)(3)(i)(A), (b)(3)(ii)(A), and (b)(3)(iii)(A). If a violation at an affected source is detected, the source shall also report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized according to the compliance procedure(s) followed each month by the affected source.

**3B-3**

Frequency of submittal of the compliance demonstration: **Semi-Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU02: Boiler Non-NSPS and EU03: Boilers NSPS**
**General Reference: COMAR 26.11.09.05A**

**Briefly describe the Emission Standard/Limit or Operational Limitation: Control of Visible Emissions**

A person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.

Exceptions. Section A(1) and (2) of this regulation do not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if: (a) The visible emissions are not greater than 40 percent opacity; and (b) The visible emission do not occur for more than 6 consecutive minutes in any sixty minute period.

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

**Frequency of submittal of the compliance demonstration: Semi-Annual/Annual**

Methods used to demonstrate compliance:

**Monitoring Reference: [COMAR 26.11.03.06C]**

**Describe:** (1) Properly operate and maintain the boilers in a manner to prevent visible emissions; and

***(the following also apply to EU02: Emission Point #1, and EU03: Emission Points #1 and #2)***
(2) Verify no visible emission when burning No. 2 fuel oil. Perform a visual observation for a 6-minute period once for each 168 hours that the boiler burns oil or at a minimum of once per year. Perform the following, if emissions are visible: (1)Inspect combustion control system and boiler operations; (2) Perform all necessary adjustments and/or repairs to the boiler within 48 hours, so that visible emissions are eliminated;
(3) Document in writing the results of the inspections, adjustments and/or repairs to the boiler; and (4) After 48 hours, if the required adjustments and/or repairs had not eliminated the visible emission, perform Method 9 observations once daily for 18 minutes until corrective actions have eliminated the visible emissions.

**Testing Reference:** None

**Describe:**

**Recordkeeping Reference: [COMAR 26.11.03.06C]**

**Describe:** (1) Maintain an operation manual and prevention maintenance plan on site; (2) Maintain a record of the maintenance performed that relates to combustion performance;
***(the following also apply to EU02: Emission Point #1Only, and EU03: Emission Points #1 and #2)***
(1) Maintain an operation manual and prevention maintenance plan on site; (2) Maintain a record of the maintenance performed that relates to combustion performance (3) Maintain a log of visible emissions observations performed and make it available to the Department's representative upon request (4) Maintain a record of the hours that No. 2 fuel oil is burned.

**Reporting Reference: [COMAR 26.11.06.03C]**

**Describe:** Report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations"

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU02: Boiler Non-NSPS and EU03: Boilers NSPS**
**General Reference: COMAR 26.11.09.07A(2)(b)**

**Briefly describe the Emission Standard/Limit or Operational Limitation: Control of Sulfur Oxides**

A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds the following limitations: Distillate fuel oils, 0.3 percent by weight.

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:** [**COMAR 26.11.03.06C]**

**Describe:** Obtain a certification from the fuel supplier indicating that the oil complies with the limitation on the sulfur content of the fuel oil.

**Testing Reference:** None

**Describe:**

**Recordkeeping Reference: [COMAR 26.11.03.06C]**

**Describe:** Maintain records of fuel supplier's certification and shall make records available to MDE upon request.

**Reporting Reference: [COMAR 26.11.09.07C]**

**Describe:** Report fuel supplier certification to MDE upon request.

**3B-5**

**Frequency of submittal of the compliance demonstration: Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU02: Boiler Non-NSPS and EU03: Boilers NSPS**
**General Reference: COMAR 26.11.09.08(B) and (F)**

**Briefly describe the Emission Standard/Limit or Operational Limitation: Control of Nitrogen Oxides**
Operator Training. The equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for the efficient operation. The operator training course sponsored by the Department shall include an in-house training course that is approved by the Department.

Requirements for Space Heaters. (1) A person who owns or operates a space heater as defined in Regulation .01B of this chapter shall: (a) Submit to the Department a list of each affected installation on the premises and the types of fuel used in each installation; (b) Develop an operating and maintenance plan to minimize NOx emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience; (c) Implement the operating and maintenance plan and maintain the plan at the premises for review upon request by the Department; (d) Require installation operators to attend in-State operator training programs once every 3 years on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and (e) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request. (2) A person who owns or operates an installation that no longer qualifies as a space heater shall inform the Department not later than 60 days after the date when the fuel-burning equipment did not qualify, and shall meet the applicable fuel-burning equipment RACT requirement in the regulation.

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference: [COMAR 26.11.09.08F(1)(b)]**

**Describe:** Develop and maintain an operating an operating and maintenance plan to minimize NOx.

**Testing Reference: [COMAR 26.11.09.08E(2)]**

**Describe:** Perform a combustion analysis once a year.

**Recordkeeping Reference: [COMAR 26.11.09.08F(1)(c)], [COMAR26.11.09.08F(1)(e)], [COMAR26.11.09.08F(1)(b)], [COMAR26.11.09.08K(3)], and [COMAR26.11.03.06C]**

**Describe:** Maintain: 1) Records of maintenance performed that relates to combustion performance in keeping with the requirements of an operations and maintenance plan. 2) Record of training program attendance for each operator. 3) An operations manual and preventive maintenance plan. 4) Records of fuel use that demonstrates that the boiler meets the definition of a space heater.

**Reporting Reference: [COMAR 26.11.09.08F(1)(e)]**

**Describe:** Submit: a record of training program attendance for each operator to the Department upon request.

**3B-6**

**Frequency of submittal of the compliance demonstration: Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU02: Boiler Non-NSPS and EU03: Boilers NSPS**
**General Reference: 40 CFR Part 63 Subpart JJJJJJ**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**
NESHAPs for Industrial, Commercial and Institutional Boilers Area Sources. ***(Applies to EU02: Emission Point #1 and EU03: Emission Points #1 and #2)***
Gas-fired boilers, as defined in 40 CFR Part 63 Subpart JJJJJJ, are not subject to this Subpart and to any requirements in this Subpart.

Per 40 CFR Part 63.11237, a gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

If the permittee operates one or more of these emission points using liquid fuel (other than during periods of gas curtailment gas supply interruption, startups) or exceeds 48 hours of period testing of liquid fuel during any calendar year, the boiler(s) would be subject to all applicable requirements of 40 CFR Part 63 Subpart JJJJJJ.

These boilers are currently considered gas-fired boilers per 40 CFR Part 63.11237 because they burn gaseous fuel(s) not combined with any solid fuels, and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or period testing not to exceed a total of 48 hours during any calendar year.

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:**

**Describe:**

**Testing Reference:**

**Describe:**

**Recordkeeping Reference:** [**COMAR 26.11.03.06(C)]**

**Describe:**

***(Applies to EU02: Emission Point #1, and EU03: Emission Points #1 and #2)***
The permittee shall maintain records of boiler operation when burning liquid fuel, including records indicating if operation occurs during a period of gas curtailment, gas supply interruption, or startup, or if operation occurs during periodic testing on liquid fuel.

**Reporting Reference: [40 CFR Part 63.11225(a)(2)]**

**Describe:**

***(Applies to EU02: Emission Point #1Only, and EU03: Emission Points #1 and #2)***
The permittee shall submit an initial notification to the Department within 120 days if a boiler operates using liquid fuel (other than during periods of gas curtailment gas supply interruption, startups) or exceeds 48 hours of period testing of liquid fuel during any calendar year.

**3B-7**

**Frequency of submittal of the compliance demonstration: Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU03: Boilers NSPS**
**General Reference: 40 CFR Part 60 Subpart Dc**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**

**Control of Visible Emissions**
The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9. 1989, 40CFR, Subpart Dc, which contains the following; § 60.43c – "(c) On and after the date on which the initial performance test is completed or required to be completed under Sec. 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility….*(truncated)*

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference: None**
**Describe:**

**Testing Reference: None**
**Describe:**

**Recordkeeping Reference: None**
**Describe:**

**Reporting Reference: None**
**Describe:**

**3B-8**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.: EU03: Boilers NSPS**
**General Reference: 40 CFR Part 60 Subpart Dc**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**
**Control of Sulfur Oxides**
The Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units with a heat input capacity less than 100 million Btu/hour but greater than 10 million Btu/hour for which construction began after June 9. 1989, 40CFR, Subpart Dc, which contains the following; § 60.42c – Standard for sulfur dioxide "(d) On and after the date on which the initial performance test is completed or required to be completed under §60.0 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere….." *(truncated)*

Permit Shield Request: Yes

**Compliance Demonstration:**

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report: _____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference: §60.46c**

**Describe:** "(e) The monitoring requirements of paragraphs (a) and (d) of this sections shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO2 standards based on fuel supplier certification, as described under §60.48c(f), as applicable"

**Testing Reference: §60.44c(h)**

**Describe:** Compliance and performance test methods and procedures for sulfur dioxide. "For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO2 standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f), as applicable."

**Recordkeeping Reference: §60.48c**

**Describe:** Reporting and record keeping requirements. "(e)(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

**Reporting Reference: §60.48c**

**Describe:** Reporting and record keeping requirement. "(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period".

**3B-9**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU04: Landfill and Natural Gas Fired IC Engines (Engine Nos. 1, 2, 3, and 4 as applicable)**
**General Reference:** **COMAR26.11.09.05(B)**

**Briefly describe the Emission Standard/Limit or Operational Limitation (see also MDE construction permit):**
Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity. Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

Exceptions. (A) Section B(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system. (B) Section B(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods: (i) Engines that are idled continuously when not in service: 30 minutes; (ii) All other engines: 15 minutes. (c) Section B(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics.

Permit Shield Request: Yes

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:**
**Describe:**

**Testing Reference: 40 CFR 60.11(e)(1)**
**Describe:** The permittee shall conduct an initial performance test to demonstrate compliance with opacity limitations.

**Recordkeeping Reference:**
**Describe:**

**Reporting Reference: [COMAR 26.11.01.07C]**
**Describe:** The permittee shall report to the Department occurrences of excess emissions.

**3B-10**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU04: Landfill and Natural Gas Fired IC Engines (Engine Nos. 1, 2, 3, and 4 as applicable)**
**General Reference:** **Reg. Nos. 9-0889, 9-1185, 9-0891, 9-0892, and 40 CFR Part 60 Subpart JJJJ**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**
The Permittee shall limit the NOx and VOC emissions from the four (4) LFG &NG-fired generator sets to less than 25 tons per year, for any 12-month consecutive period.

For registration numbers 9-0889, 9-0891, and 9-0892, the following emission limitations shall apply:

$NO_X$: 3.0 g/Hp-hr/220 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr/160 ppmvd at 15% $O_2$ (Natural Gas)
CO: 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 4.0 g/Hp-hr/540 ppmvd at 15% $O_2$ (Natural Gas)
VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd $O_2$ (Landfill Gas) & 1.0 g/Hp-hr/86 ppmvd at 15% $O_2$ (Natural Gas)

For registration number 9-1185, the following emission limitations shall apply:

$NO_X$: 2.0 g/Hp-hr/150 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr/82 ppmvd at 15% $O_2$ (Natural Gas)
CO: 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr/270 ppmvd at 15% $O_2$ (Natural Gas)
VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 0.7 g/Hp-hr ppmvd at 15% $O_2$ (Natural Gas)

Permit Shield Request: Yes

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference: COMAR 26.11.03.06C, Reg. Nos. 003-0316-9-0889, 003-0316-9-0891, 003-0316-9-0892, 003-0316-9-1185**

**Describe:** The permittee shall monitor and log the monthly fuel use, fuel type, and hours of operation of each IC engine generator set.

The permittee shall calculate and record the emissions from the 4 LFG & NG-fired generator sets for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly within the first 15 days of each following month.

**Testing Reference: 40 CFR §60.8, 40 CFR §60.4243(b)(2)(ii)**

**Describe:** The permittee shall conduct an initial performance test for NOx, CO and NMHC to demonstrate compliance with the applicable permit limitations.

The permittee shall conduct performance tests in accordance with 40 CFR §60.8.

The permittee shall conduct subsequent performance tests for LFG-fired generator sets every 3 years or 8,760 hours of operation, whichever comes first, to demonstrate compliance with the requirements of 40 CFR Part 60 Subpart JJJJ, Table 1.

**3B-11**

**SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS**

**Emissions Unit No.: EU04: Landfill and Natural Gas Fired IC Engines (Engine Nos. 1, 2, 3, and 4 as applicable)**
**General Reference: Reg. Nos. 9-0889, 9-1185, 9-0891, 9-0892, and 40 CFR Part 60 Subpart JJJJ (Continued)**

**Recordkeeping Reference: COMAR 26.11.03.06C, 40 CFR §60.4243(b)(2)(ii)**

**Describe:** The permittee shall maintain the records and the results of all emissions testing performed on the landfill gas-fired electric-generating engines as required under 40 CFR §60.4243(c)(2).

The permittee shall keep records in accordance with 40 CFR §60.4245.

The permittee shall maintain an operations manual and maintenance plan on site.

In order to demonstrate compliance with the emissions limitations requirement for exemption from NSR, the Permittee shall calculate and record the emissions from the four-(4) landfill-gas fired, 1,057 kW, GE Jenbacher 320 engine/generators, for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly, within the first 15 days of each following month. The results of the calculations and logs shall be maintained on site and made available to the Department upon request.

The permittee shall calculate and record the emissions from the 4 LFG and NG-fired generator sets for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly within the first 15 days of each following month.

The permittee shall maintain at the facility for at least 5 years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include (1) mass emission rates for each regulated pollutant, (2) accounts of the methods and assumptions used to quantify emissions, (3) all operating data that were used in determinations of emissions, (4) amounts, types and analyses of all fuels used, (5) records that pertain to the O&M of continuous emissions monitors, (6) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, (7) limitations on source operation or any work practice standards that significantly affect emissions, and (8) other relevant information as required by the Department.

**Reporting Reference: COMAR 26.11.03.06(C), 40 CFR §60.4243(b)(2), 40 §CFR 60.4245**

**Describe:** The permittee shall submit along with the required semi-annual compliance reports a summary report verifying that the synthetic minor limitation for NOx was not exceeded for the IC engine generator sets.

The permittee must report all violations of visible, CO, and VOC emissions, and submit maintenance records upon request.

The permittee shall provide the Department with two copies of the test protocols at least 30 days prior to any scheduled performance tests. The permittee shall submit to the Department the stack test report within 60-days following completion of the tests.

**3B-12**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU04: Landfill and Natural Gas Fired IC Engines (Engine #2)**
**General Reference:** **Reg. No. 003-0316-9-1185, 40 CFR 60 Subpart JJJJ**

**Briefly describe the Emission Standard/Limit or Operational Limitation (see also MDE construction permit):**

$NO_X$: 2.0 g/Hp-hr/150 ppmvd at 15% $O_2$ (Landfill Gas) & 1.0 g/Hp-hr/82 ppmvd at 15% $O_2$ (Natural Gas)
CO: 5.0 g/Hp-hr/610 ppmvd at 15% $O_2$ (Landfill Gas) & 2.0 g/Hp-hr/270 ppmvd at 15% $O_2$ (Natural Gas)
VOC (NMHC): 1.0 g/Hp-hr/80 ppmvd at 15% $O_2$ (Landfill Gas) & 0.7 g/Hp-hr ppmvd at 15% $O_2$ (Natural Gas)

The Permittee shall fire LFG at 10 percent or more of the gross heat input on an annual basis, in order to be subject to the NSPS JJJJ LFG emissions standards. If not, then the engines must satisfy the emissions limits and requirements for natural gas fired engines.

The Permittee shall burn only natural gas and/or landfill gas (LFG) in the engine/generator.

Permit Shield Request: Yes

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference: Reg. No. 003-0316-9-1185, 40 CFR §60.4237**

**Describe:** The Permittee must install a non-resettable hour meter for each engine prior to start-up of the engine.

If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

**Testing Reference: 40 CFR §60.4243(b)(2)(ii), 40 CFR §60.4244, Reg. No. 003-0316-9-1185**

**Describe:** The Permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours of operation or 3 years, whichever comes first, to demonstrate compliance with the emissions standards of 40 CFR 60, Subpart JJJJ.

**Emissions Unit No.: EU04: Landfill and Natural Gas Fired IC Engines (Engine #2)**
**General Reference: Reg. No. 003-0316-9-1185, 40 CFR 60 Subpart JJJJ (Continued)**

**Recordkeeping Reference: Reg. No. 003-0316-9-1185**

**Describe:** The Permittee shall maintain the following records on site for at least five (5) years and they shall be made available to the Department upon request:

(1) The operating hours for each generator
(2) Monthly records of fuel use
(3) A copy of the generator's operations and maintenance manual, and records of maintenance and repairs performed.

For any NSPS emergency diesel engine the Permittee shall for each fuel delivery obtain from the fuel supplier a fuel supplier certification consisting of the name of the oil supplier, the date of delivery, the amount of fuel delivered, and a statement from the fuel supplier.

The Permittee shall maintain on site and make available to the Department upon request the following records:

(1) All notifications submitted to comply with 40 CFR 60, Subpart JJJJ and all documentation supporting any notification.

(2) Engine/generator and oxidation catalyst manufacturer's operations and maintenance manual.

(3) Maintenance plan and records of conducted maintenance.

(4) Documentation that the engines meet the emission standards.

(5) A copy of the results of each performance/emissions test conducted.

**Reporting Reference: Reg. No. 003-0316-9-1185**

**Describe:** If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit along with your annual emissions certification an annual report containing the following information:

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

The Permittee shall submit and initial notification as required in §60.7(a)(1).

**3B-14**

Frequency of submittal of the compliance demonstration: **Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU04: Landfill and Natural Gas Fired IC Engines (Engine Nos. 1, 2, 3, and 4 as applicable)**
**General Reference:** **40 CFR Part 63 Subpart ZZZZ**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**

NESHAPs for Stationary RICE. Compliance with the requirements of 40 CFR Part 60 Subpart JJJJ, for spark ignition engines satisfies all requirements for NESHAP Subpart ZZZZ (note: The Permittee shall meet the requirements of 40 CFR Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60 Subpart JJJJ).

Permit Shield Request: Yes

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:**
**Describe:**

**Testing Reference:**
**Describe:**

**Recordkeeping Reference:**
**Describe:**

**Reporting Reference:**
**Describe:**

**3B-15**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

## SECTION 3B. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Emissions Unit No.:** **EU04: Landfill and Natural Gas Fired IC Engines (Engine Nos. 1, 2, 3, and 4 as applicable)**
**General Reference: 40 CFR Part 60 Subpart JJJJ**

**Briefly describe the Emission Standard/Limit or Operational Limitation:**

NSPS for Stationary RICE. The permittee shall comply with applicable requirements of 40 CFR Part 60 Subpart JJJJ.

Permit Shield Request: Yes

Check appropriate reports required to be submitted:

- ☐ Quarterly Monitoring Report:_____
- ☐ Annual Compliance Certification: X
- ☐ Semi-Annual Monitoring Report: X

Methods used to demonstrate compliance:

**Monitoring Reference:**
**Describe:**

**Testing Reference:**
**Describe:** (See above)

**Recordkeeping Reference: 40 CFR Part 60 Subpart JJJJ (40 CFR 60.4245)**
**Describe:** The permittee shall keep records of the following information:
(1) notification submitted to comply with Subpart JJJJ and all documentation supporting any notification,
(2) maintenance conducted on the engine,
(3) if the engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the applicable emission standards as required in 40 CFR Parts 90 and 1048, and
(4) if the engine is not a certified engine, documentation that the engine meets the applicable emission standards.

**Reporting Reference:**
**Describe:**

**3B-16**

Frequency of submittal of the compliance demonstration: **Semi-Annual/Annual**

**SECTION 3C. OBSOLETE, EXTRANEOUS, OR INSIGNIFICANT PERMIT CONDITIONS**

**List permit to construct conditions which should be considered to be obsolete, extraneous, or environmentally insignificant.**

**Emissions Unit No.: EU02: Boiler – Non NSPS, Non-NESHAP**

**Permit to Construct No. N/A - Ref. Current Title V Op. Permit issued 12/1/2015**

| Emissions Point No. | Date Permit Issued | Condition No. | Brief Description of Condition and Reason for Exclusion |
|---|---|---|---|
| **EU-02 Emission Pt:2** | 12/1/2015 | 3.0<br>3.1<br>3.2<br>3.3<br>3.4<br>3.5 | Description<br>EU-02 – Emission Point 2 (Reg. No. 4-0746: One Burnham Commercial B9A natural gas fired boiler rated at 3 MMBtu/hr heat input.<br>Rationale<br>This boiler was decommissioned in October 2015. Thus, these conditions are obsolete and can be removed from the permit. |
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## SECTION 3D. ALTERNATE OPERATING SCENARIOS

**Emissions Unit No.: Not Applicable**

Briefly describe any alternate operating scenarios. Assign a number to each scenario for identification purposes.

***Not Applicable***

**SECTION 3E. CITATION TO AND DESCRIPTION OF APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS FOR AN ALTERNATE OPERATING SCENARIO**

**Scenario No.: No alternative operating scenarios exist**

**Emissions Unit No.: _____ General Reference: _____**

Briefly describe any applicable Emissions Standard/Limits/Operational Limitations:

***Not Applicable***

_____

_____

_____

_____

_____

_____

**Compliance Demonstration**

Methods used to demonstrate compliance:

Monitoring: Reference _____ Describe: _____

_____

_____

_____

Testing: Reference _____ Describe: _____

_____

_____

_____

Record Keeping: Reference _____ Describe: _____

_____

_____

_____

Reporting: Reference _____ Describe: _____

_____

_____

_____

**Frequency of submittal of the compliance demonstration: _____**

## SECTION 4. CONTROL EQUIPMENT

| 1. Associated Emissions Units No. :<br><br>***Not Applicable*** | 2. Emissions Point No.: |
|---|---|
| 3. Type and Description of Control Equipment: | |
| | |
| | |
| | |
| | |

| 4. Pollutants Controlled: | Control Efficiency: |
|---|---|
| | |
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| | |
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| | |
| | |
| | |

5. Capture Efficiency:

## SECTION 5. SUMMARY SHEET OF POTENTIAL EMISSIONS

**List all applicable pollutants in tons per year (tpy) pertaining to this facility. The Emissions Unit No. should be consistent with numbers used in Section 3. Attach a copy of all calculations.**

| | Pollutant and CAS Number | | | | |
|---|---|---|---|---|---|
| | VOC | $NO_x$ | $SO_x$ | CO | $PM_{10}$ |
| **Emission Unit** | **N/A** | **10102440** | **7446095** | **630080** | **N/A** |
| EU01 -Painting and Surface Coating | 45.0[1] | 0.0 | 0.0 | 0.0 | 0.0 |
| EU02 - Boiler Non-NSPS[2] | 1.0 | 10.0 | 10.0 | 10.0 | 5.0 |
| EU03 - Boilers NSPS[3] | 1.0 | 10.0 | 10.0 | 10.0 | 5.0 |
| EU04 - LFG & NG Engines[4] | 24.9 | 24.9 | 2.5 | 141.6 | <1.0 |
| Total | 71.9 | 44.9 | 22.5 | 161.6 | <11.0 |

1. Potential VOC emission rates for EU01 based on maximum actual emission rate for previous 10-year period with 20 percent safety factor.

2. Potential emission rates for EU02 based on maximum actual emission rate for previous 10-year period with appropriate safety factor applied.

3. Potential emission rates for EU03 based on maximum actual emission rate for previous 10-year period with appropriate safety factor applied.

4. Potential emission rates for EU04 based on applicable enforceable permit emission limitations for VOC and NOx. Potential SOx, CO, and $PM_{10}$ emission rates based on permit-to-construct application emission factors and assuming all engines operate continuously at their rated heat input.

## SECTION 6. EXPLANATION OF PROPOSED EXEMPTIONS FROM OTHERWISE APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

**Describe and cite the applicable requirements to be exempted. Complete this Section only if the facility is claiming exemptions from or the non-applicability of any federally enforceable requirements.**

| |
|---|
| 1. Applicable Requirement:<br>*Not Applicable* |
| 2. Brief Description: |
| 3. Reasons for Proposed Exemption or Justification of Non-applicability: |

## SECTION 7. COMPLIANCE SCHEDULE FOR NONCOMPLYING EMISSIONS UNITS

| 1. Emissions Unit # | Anticipated Compliance Date |
|---|---|
| | |
| Applicable Federally Enforceable Requirement being Violated:<br><br>***Not Applicable*** | |

2. Description of Plan to Achieve Compliance:

***Not Applicable***

Certified Progress Reports for sources in noncompliance shall be submitted at least quarterly to the Department.

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# 3 STATE-ONLY REQUIREMENTS

**STATE-ONLY ENFORCEABLE REQUIREMENTS**

**Facility Information:**

| | |
|---|---|
| **Name of Facility:**<br>United States Coast Guard | **County**<br>Anne Arundel |
| **Premises Number:**<br>24-003-0316 | |
| **Street Address:**<br>2401 Hawkins Point Road<br>Baltimore, Maryland 21226-1797 | |
| **24-hour Emergency Telephone Number for Air Pollution Matters:**<br>410-636-3993 | |
| **Type of Equipment (List Significant Units):**<br><br>EU01: Painting and Surface Coating Operations<br>EU02: Boiler (non-NSPS)<br>EU03: Boilers (NSPS)<br>EU04: LFG/NG-fired IC engines | |
| | |
| | |
| | |

## CITATION TO AND DESCRIPTION OF APPLICABLE STATE-ONLY ENFORCEABLE REQUIREMENTS

**Registration No.: Facility-Wide Emissions Unit No.: Facility-Wide**
**General Reference: COMAR 26.11.06.08**

**Briefly describe the requirement and the emissions limit (if applicable):**

This condition generally stipulates that the facility may not be operated or maintained in such a manner that a nuisance or air pollution is created.

**Methods used to demonstrate compliance:**

The permittee implements various monitoring, testing, recordkeeping and reporting practices as required by this permit to demonstrate compliance with this condition.

## CITATION TO AND DESCRIPTION OF APPLICABLE STATE-ONLY ENFORCEABLE REQUIREMENTS

**Registration No.: Facility-Wide Emissions Unit No.: Facility-Wide**
**General Reference: COMAR 26.11.06.09**

**Briefly describe the requirement and the emissions limit (if applicable):**

This condition generally stipulates that the facility may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that nuisance or air pollution is created.

**Methods used to demonstrate compliance:**

The permittee implements various monitoring, testing, recordkeeping and reporting practices as required by this permit to demonstrate compliance with this condition.

## CITATION TO AND DESCRIPTION OF APPLICABLE STATE-ONLY ENFORCEABLE REQUIREMENTS

**Registration No.: Facility-Wide Emissions Unit No.: Facility-Wide**
**General Reference: COMAR 26.11.15.05 and .06**

**Briefly describe the requirement and the emissions limit (if applicable):**

These conditions generally stipulate that the facility must install and operate T-BACT for new installations or sources discharging a toxic air pollutant to the atmosphere, and that new sources or installations must comply with the allowable emissions of toxic air pollutants.

**Methods used to demonstrate compliance:**

The permittee shall demonstrate to the Department that new sources which discharge a toxic air pollutant to the atmosphere shall employ T-BACT, as applicable (e.g., via air construction permitting), and that these sources comply with the allowable emissions of toxic air pollutants.

## CITATION TO AND DESCRIPTION OF APPLICABLE STATE-ONLY ENFORCEABLE REQUIREMENTS

**Registration No.: Facility-Wide Emissions Unit No.: Facility-Wide**
**General Reference: COMAR Title 26 Subtitle 11**

**Briefly describe the requirement and the emissions limit (if applicable):**

This condition generally stipulates that the facility must submit to the Department (by April 1 annually) a written certification that the facility is in compliance with the COMAR Air Toxic Regulations.

**Methods used to demonstrate compliance:**

The permittee submits this certification annually in conjunction with the Emissions Certification Report.

# 4 SUMMARY OF INSIGNIFICANT ACTIVITIES

## III. Checkoff List of Emissions Units and Activities Exempt from the Part 70 Permit Application

### Insignificant Activities

Place a check mark beside each type of emissions unit or activity that is located at the facility. Where noted, please indicate the number of that type of emissions unit or activity located at the facility.

(1) No. 6 — Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour;

(2) No. ___ — Fuel-burning equipment using solid fuel and having a heat input of less than 350,000 Btu (0.37 gigajoule) per hour;

(3) No. 12 — Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

(4) ✓ — Space heaters utilizing direct heat transfer and used solely for comfort heat;

(5) ___ — Water cooling towers and water cooling ponds unless used for evaporative cooling of water from barometric jets or barometric condensers, or used in conjunction with an installation requiring a permit to operate;

(6) No. ___ — Unheated VOC dispensing containers or unheated VOC rinsing containers of 60 gallons (227 liters) capacity or less;

(7) ___ — Commercial bakery ovens with a rated heat input capacity of less than 2,000,000 Btu per hour;

(8) ___ — Kilns used for firing ceramic ware, heated exclusively by natural gas, liquefied petroleum gas, electricity, or any combination of these;

(9) ___ — Confection cookers where the products are edible and intended for human consumption;

(10) ___ — Die casting machines;

(11) ___ — Photographic process equipment used to reproduce an image upon sensitized material through the use of radiant energy;

(12) ✓ — Equipment for drilling, carving, cutting, routing, turning, sawing, planing, spindle sanding, or disc sanding of wood or wood products;

(13) ✓ Brazing, soldering, or welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals and not directly related to plant maintenance, upkeep and repair or maintenance shop activities;

(14) ✓ Equipment for washing or drying products fabricated from metal or glass, provided that no VOC is used in the process and that no oil or solid fuel is burned;

(15) ___ Containers, reservoirs, or tanks used exclusively for electrolytic plating work, or electrolytic polishing, or electrolytic stripping of brass, bronze, cadmium, copper, iron, lead, nickel, tin, zinc, and precious metals;

(16) Containers, reservoirs, or tanks used exclusively for:

(a) ___ Dipping operations for applying coatings of natural or synthetic resins that contain no VOC;

(b) ___ Dipping operations for coating objects with oils, waxes, or greases, and where no VOC is used;

(c) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas;

(d) No. 21 Storage of lubricating oils:
(i) constructed on or before July 23, 1984, or
(ii) constructed after July 23, 1984, and having capacities less than 10,568 gallons (40 cubic meters);

(e) No. ___ Storage of lubricating oils, constructed after July 23, 1984, and having individual tank capacities of 10,568 gallons (40 cubic meters) or greater;

(f) No. ___ Unheated storage of VOC with an initial boiling point of 300 °F (149 °C) or greater:
(i) constructed on or before July 23, 1984, or
(ii) constructed after July 23, 1984, and having capacities less than 10,568 gallons (40 cubic meters);

(g) No. ___ Unheated storage of VOC with an initial boiling point of 300°F (149 °C) or greater, constructed after July 23, 1984, and having individual tank capacities of 10,568 gallons (40 cubic meters) or greater;

(h) No. 12 Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel:
(i) constructed on or before July 23, 1984, or
(ii) constructed after July 23, 1984, and having capacities less than 10,568 gallons (40 cubic meters);

(i) No. ___ Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel, constructed after July 23, 1984, and having individual tank capacities of 10,568 gallons (40 cubic meters) or greater;

(j) No. 2 Storage of motor vehicle gasoline and having individual tank capacities of 2,000 gallons (7.6 cubic meters) or less;

(k) No. varies The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;

*No storage of these products in drums or tanks, however the facility does store products such as thinners in smaller (typically 1 or 5-gallon) containers.*

(17) ___ Gaseous fuel-fired or electrically heated furnaces for heat treating glass or metals, the use of which does not involve molten materials;

(18) Crucible furnaces, pot furnaces, or induction furnaces, with individual capacities of 1,000 pounds (454 kilograms) or less each, in which no sweating or distilling is conducted, or any fluxing is conducted using chloride, fluoride, or ammonium compounds, and from which only the following metals are poured or in which only the following metals are held in a molten state:

(a) ___ Aluminum or any alloy containing over 50 percent aluminum, if no gaseous chloride compounds, chlorine, aluminum chloride, or aluminum fluoride is used;

(b) ___ Magnesium or any alloy containing over 50 percent magnesium;

(c) Lead or any alloy containing over 50 percent lead;

(d) Tin or any alloy containing over 50 percent tin;

(e) Zinc or any alloy containing over 50 percent zinc;

(f) Copper;

(g) Precious metals;

(19) ✓ Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;

(20) ✓ First aid and emergency medical care provided at the facility, including related activities such as sterilization and medicine preparation used in support of a manufacturing or production process;

(21) ✓ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

(22) ___ Potable water treatment equipment, not including air stripping equipment;

(23) ✓ Non-contact water (i.e., water that has not been in direct contact with process fluids) cooling towers except as regulated under Section 112 of the Clean Air Act;

(24) ___ Firing and testing of military weapons and explosives;

(25) ___ Emissions resulting from the use of explosives for blasting at quarrying operations and from the required disposal of boxes used to ship the explosive;

(26) ✓ Comfort air conditioning subject to requirements of Title VI of the Clean Air Act;

(27) ___ Grain, metal, or mineral extrusion presses;

(28) ___ Breweries with an annual beer production less than 60,000 barrels;

(29) ✓ Natural draft hoods or natural draft ventilators that exhaust air pollutants into the ambient air from manufacturing/industrial or commercial processes;

(30) ___ Laboratory fume hoods and vents;

(31) No. ___ Sheet-fed letter or lithographic printing press(es) with a cylinder width of less than 18 inches;

*For the following, attach additional pages as necessary:*

(32) any other emissions unit, not listed in this section, with a potential to emit less than the "de minimus" levels listed in COMAR 26.11.02.10X (list and describe units):

No. 1 Degreasing operation using heated KOH, stored in a 3,000 gallon AST in Building 5.

No. 1 Spray can painting operations in various locations at the facility, including but not limited to: Buildings 40B, and 66.

No. 1 Abrasive blasting and surface preparation operations in various locations at the facility. Locations include, but are not limited to: Buildings 5, 5A, 8, 8A, 11, 34, 35, 40, 40B, 42, 58, and 78, as well as alongside piers and bulkheads, vessels in dry dock, ship-lift, and vessels hauled-out on land.

No. 1 Equipment/part painting operations in Building 11.

(33) any other emissions unit at the facility which is not subject to an applicable requirement of the Clean Air Act (list and describe):

No. 1 Marine engine/dynamometer test cell in Building 91

No. 2 Refrigeration recovery operation in Building 8 and Building 12

✓ Refrigeration recovery operation from ships reconditioned or serviced

✓ Mobile Sources (including but not limited to):

- Passenger vehicles
- Fleet vehicles
- Rail Cranes
- Non-road vehicles
- Marine vessels

# 5 APPLICATION COMPLETENESS CHECKLIST

## VI .Application Completeness Checklist

The purpose of this part is to list the information required to achieve a Part 70 application shield.

### Cover Page

( √ ) Name and address of owner or operator, including telephone number.

( √ ) Name and address of facility, including the plant manager's name and telephone number.

(√ ) A 24-hour emergency telephone number for air pollution matters.

### Section 1 CERTIFICATION STATEMENTS

(√ ) The certification statement completed and signed by a responsible official.

### Section 2 FACILITY DESCRIPTION SUMMARY

(√ ) A brief description of each of the source's process(es), including all applicable SIC codes and end products.

( n/a ) Flow diagrams indicating all emissions units, emission points, and control devices.

(√ ) A plot plan of the entire facility.

(√ ) Emission Certification Report.

(√ ) General Emissions Information.

### Section 3 EMISSIONS UNIT DESCRIPTIONS –

This section must be completed for each emissions unit.

### Part A

(√ ) Emissions unit number.

(√ ) Detailed description of unit, including all emission points.

(√ ) Federally enforceable limit(s) on the operating schedule.

(√) Fuel consumption information for <u>any</u> emissions unit that consumes fuel including the type of fuel, percent sulfur, and annual usage of fuel.

**Part B**

(√) A citation and description of each federally enforceable requirement, including all emission standards, for each emissions unit.

(√) A statement of compliance demonstration techniques for each requirement, including a description of monitoring, record keeping, reporting requirements, and test methods.

( √ ) The frequency of submittal of the compliance demonstration during the permit term.

**Part C**

( √ ) Emissions unit number.

( N/A ) Permit to construct number.

( √ ) Emissions point number(s).

( √ ) Date(s) the permit to construct was issued.

( √ ) Condition number(s) as indicated on the permit to construct.

( √ ) Description of the permit condition(s) and the reason(s) why they are believed to be obsolete, extraneous, or insignificant.

**Part D –*Not Applicable***

( ) Description of all alternate operating scenarios that apply to an emissions unit.

( ) Number assigned to each scenario.

( ) Emissions unit number.

( ) Description of the operating parameters for the emissions unit and other information which describes the how the operation of the unit will change under the different scenario.

**Part E – *Not Applicable***

( ) A citation and description of each federally enforceable requirement triggered by an operating scenario, including all emission standards, for each emissions unit.

( ) As an attachment, the date and results of the most recent compliance demonstration for each emission standard and/or emissions certification report with relevant supporting documentation.

( ) A statement of compliance demonstration techniques for each requirement, including a description of monitoring, record keeping, reporting requirements, and test methods.

( ) The frequency of submittal of the compliance demonstration during the permit term.

## Section 4 CONTROL EQUIPMENT – *Not Applicable*

( ) The type of each piece of air pollution control equipment

( ) The capture and control efficiencies of the control equipment.

## Section 5 SUMMARY SHEET OF POTENTIAL EMISSIONS

( √ ) Quantity of potential emissions for criteria pollutants and HAPs emitted in tons per year for each emissions unit.

( √ ) Fugitive emission estimations for the entire facility for criteria pollutants and HAPs emitted in tons per year.

( √) Basis for all emission calculations.

## Section 6 AN EXPLANATION OF PROPOSED EXEMPTIONS FROM OTHERWISE APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

( √ ) An explanation of the proposed exemption.

## Section 7 COMPLIANCE SCHEDULE FOR NONCOMPLYING EMISSIONS UNITS – *Not Applicable*

( ) Identification of emissions unit(s) not in compliance, including the requirement being violated and the effective compliance date.

( ) Detailed description of methods to be used to achieve compliance.

( ) A schedule of remedial measures, including an enforceable sequence of actions with milestones.

## Attachment

( √ ) Checklist of Insignificant Activities

( N/A ) CAM Plan (If Applicable)

# 6 BUDGET RECONCILIATION AND FINANCING ACT FORM

# MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Suite 720 • Baltimore, Maryland 21230-1720
410-537-3000 • 800-633-6101 • http://www.mde.maryland.gov

Air and Radiation Administration • Air Quality Permits Program

## Budget Reconciliation and Financing Act of 2003
## (Commonly referred as Maryland House Bill 935)

On July 1, 2003, House Bill 935, Chapter 203 amended § 1-203 of the Environment Article, Annotated Code of Maryland, as follows:

Section 1-203(b).
(1) A license or permit is considered renewed for purposes of this subsection if the license or permit is issued by a unit of State government to a person for the period immediately following a period for which the person previously possessed the same or a substantially similar license.
(2) Before any license or permit may be renewed under this article, **the issuing authority shall verify through the office of the Comptroller (emphasis added)** that the applicant has paid all undisputed taxes and the unemployment insurance contributions payable to the Comptroller or the Secretary of Labor, Licensing, and Regulation or that the applicant has provided for payment in a manner satisfactory to the unit responsible for collection.

In order for the Maryland Department of the Environment (MDE) to verify this compliance, we would need you to provide the following information before we can process or issue your renewal license, permit, or certification:

**Current MDE License/Permit No.:** 24-003-0316

**Name of Licensee or Permit Holder:** U.S Coast Guard Yard- Curtis Bay

**Address:** 2401 Hawkins Point Rd. MS 10

Curtis Bay, Maryland 21226-1797

**Contact Name:** LCDR, John Adams, PE **Title:** Facility Engineer

**Contact Telephone Number:** 410-636-4097

**Privacy Act Notice:** This Notice is provided pursuant to the Federal Privacy Act of 1974, 5 U.S.C. § 552a. Disclosure of your Social Security or Federal Tax Identification on this form is mandatory pursuant to the provisions of § 1-203 (2003) of Environment Article, Annotated Code of Maryland, which requires MDE to verify that an applicant for a permit or license has paid all undisputed taxes and unemployment insurance. Social Security and Federal Tax Identification Nos. will not be used for any purposes other than those described in this Notice.

**Federal Employer Identification Number (FEIN):** 52-0592213

*Certification: I certify that the above information is true and correct to the best of my knowledge.*

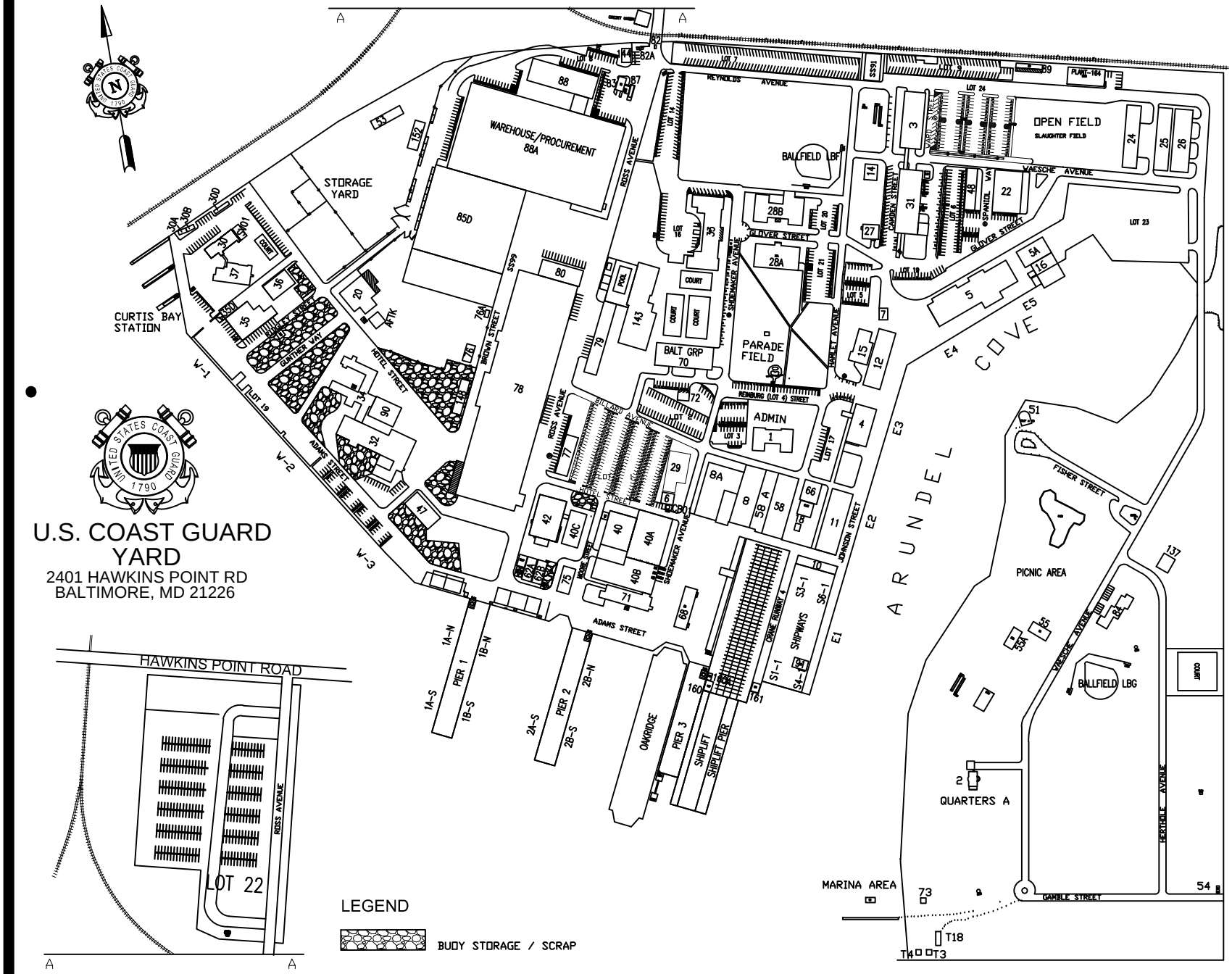
Signature

10/17/19
Date

***Complete and return this form to Sena Harlley at the above address. If you have any questions, please contact Ms. Harlley at (410) 537-3251.***

# APPENDIX A

# FACILITY MAP




## BUILDINGS

| | |
|---|---|
| 001 | ADMINISTRATION |
| 002 | QUARTERS A |
| 003 | DRYDOCK CLUB/ ELC |
| 003A | DRYDOCK CLUB STORAGE SHED |
| 004 | FACILITIES/ FISCAL/ WOODSHOP |
| 005 | BOAT BUILDING/FIBERGLASS SHOP |
| 005A | SMALL BOAT SHOP ANNEX |
| 005B | SANDBLAST SHED |
| 006A | PIPE DEGREASING SHOP |
| 007 | CUSTODIAL OFFICE |
| 008 | PIPE SHOP |
| 008A | MACHINE SHOP (INSIDE) |
| 010 | SHIP WAYS/HEAD HOUSE |
| 011 | ENGINE SHOP |
| 012 | FACILITIES MAINTENACE SHOP |
| 014 | TRAINING/LECTURE HALL |
| 015 | POWER HOUSE |
| 016 | SMALL BOAT SHOP/RESERVES |
| 017 | MARINE RAIL WAY W/MACHINE HOUSE |
| 018 | SEWAGE PUMPING STATION |
| 020 | FLAMMABLE STORAGE BUILDING |
| 022 | STORAGE BUILDING (ELEC) |
| 024 | STORAGE BUILDING (ELEC) |
| 025 | STORAGE BUILDING (INDUSTRIAL) |
| 026 | STORAGE BUILDING (INDUSTRIAL) |
| 027 | CLASSROOMS |
| 028A | BOQ/TRAINING CENTER |
| 028B | CLINIC – OUTPATIENT |
| 029 | MATERIAL HANDLING SHOP |
| 030 | CURTIS BAY STATION WORKSHOP |
| 030A | ATON STORAGE |
| 030B | ATON STORAGE |
| 030D | FLAMMABLE STORAGE |
| 031 | ENGINEERING LOGISTICS CENTER |
| 031A | SMOKING SHELTER |
| 032 | PAINT SHOP |
| 033 | BARRACKS/ EXCHANGE/ GALLEY |
| 033A | MWR STORAGE SHED |
| 034 | PAINT/SAND BLAST SHOP |
| 034A | FLAMMABLE STORAGE |
| 035 | SECTOR ENGINEERING DEPOT |
| 035A | WLM STORAGE SHED |
| 035B | BUOY SHED |
| 035C | WLIC STORAGE SHED |
| 035D | WLIC STORAGE SHED |
| 036 | SECTOR BUOY SHED |
| 036A | FLAMMABLE STORAGE SHED |
| 036B | FLAMMABLE STORAGE SHED |
| 036C | BUOY SHED |
| 037 | CURTIS BAY STATION |
| 040 | ELECTRONICS SHOP |
| 040A | ELECTRONICS SHOP |
| 040B | ELECTRIC SHOP |
| 040C | ORDNANCE SHOP |
| 040E | ELECTRONIC STORAGE |
| 042 | ORDNANCE SHOP |
| 047 | BOAT JOINTERS SHOP/STORAGE |
| 048 | STORAGE BUILDING |
| 051 | MAGAZINE |
| 051A | AMMO STORAGE |
| 053 | BULK STORAGE/RECYCLING |
| 054 | EAST GATE HOUSE (BACK) |
| 055 | PAVILION |
| 055A | PAVILION |
| 058 | OUTSIDE MACHINE SHOP/INDUSTRIAL OFFICES |
| 058A | PIPE SHOP/OFFICES |
| 061 | MARINE RAILWAY W/TURNTABLE |
| 062A | TEMPORARY LIGHTS (SERVICES) BUILDING |
| 062B | TEMPORARY PIPE (SERVICES) BUILDING |
| 062C | PAINT SHED |
| 066 | MOBILE EQUIPMENT MAINTENANCA SHOP |
| 068 | DRY-DOCK HH #1/CIV. CAFETERIA/OFFICES |
| 070 | SECTOR BALTIMORE |
| 071 | CENTRAL TOOLROOM/DRY-DOCK SHOP |
| 071A | FLAMMABLE STORAGE |
| 072 | SECTOR BALTIMORE STORAGE |
| 073 | GREEN HOUSE |
| 075 | DRY-DOCK HH #2/WOOD SHOP STORAGE |
| 076A | FLAMMABLE GAS STORAGE |
| 077 | CENTRAL HEAD HOUSE/LOCKER ROOM |
| 078 | FABRICATION SHOP |
| 079 | FIRE HOUSE/SAFETY OFFICE |
| 079A | STORAGE SHED |
| 080 | MOLD LOFT |
| 082 | MAIN GATE |
| 082A | MAIN GATE ANNEX |
| 083 | MAIL ROOM |
| 084 | GUEST HOUSING |
| 085D | WAREHOUSE |
| 087 | SCALE HOUSE |
| 088 | ELC OFFICE/ELECTRONICS SYS. LAB |
| 088A | WAREHOUSE |
| 088B | SMOKING SHELTER |
| 089 | RAILRAOD SIDING PLATFORM SHED |
| 090 | PAINT SHOP |
| 091 | DYNAMOMETER BUILDING |
| 137 | FBI & HEADS BUILDING |
| 143 | COLUMBUS RECREATION CENTER |
| 143A | STORAGE SHED |
| 144 | SECURITY |
| 145 | COMPUTER TAPE STORAGE BUILDING |
| 148 | SHEET METAL SHOP STORAGE |
| 152 | SALVAGE LOT STORAGE |
| 160 | SHIP LIFT CONTROL HOUSE |
| 160A | STORAGE |
| 161 | SHIP LIFT PUMP HOUSE |
| 163 | ACID STORAGE |
| 164 | GAS GENERATOR BUILDING |

USCG YARD MAP (updated 4/1/14)by FACILITIES ENGINEERING

SCALE: 1"=400'

# APPENDIX B

# 2018 EMISSION CERTIFICATION REPORT

Environmental Consultants
11260 Roger Bacon Drive
Suite 300
Reston, VA 20190-5282
703 471-6150
FAX 703 471-6676
www.scsengineers.com
SCS ENGINEERS

March 26, 2019
File No. 02207056.00

Mr. Derrick Josey **via electronic transmittal**
Environmental Engineer
U.S. Coast Guard Yard
2401 Hawkins Point Road
Baltimore, Maryland 21226

Subject: Annual Emission Certification Report: January through December 2018
US Coast Guard Yard, Baltimore Maryland

Dear Derrick:

SCS Engineers (SCS) is pleased to submit the enclosed report as required by the Title V Operating Permit of the U.S. Coast Guard Yard in Baltimore, Maryland (Title V Permit 24-003-00316). EPA requests that the Emission Certification Report be submitted electronically to the following address: **R3_APD_Permits@epa.gov** and two copies of the report must be sent to MDE postmarked by April 1, addressed to:

Maryland Department of the Environment
Air and Radiation Management Administration
1800 Washington Boulevard, Suite 715
Baltimore, Maryland 21230-1720
Attention: Laramie Daniel, Compliance Program

SCS evaluated the air toxic emission rates in 2018 with respect to the MDE Toxic requirements which showed that 17 HAPS were above reporting limits in the 192 Toxic Air Pollutants. Those pollutants have been reported in the Emission Certification Report.

In your transmittal to MDE, a statement should be included certifying that the Yard is in compliance with the Toxic Requirements in the Section VI – State only Enforceable Conditions.

Also, this report shows that the cumulative nitrogen oxide (NOx) emission rate for the four engine/generators in 2018 was 15.6 tons. This demonstrates compliance with the Title V permit synthetic minor NOx emission limitation of 25 tons per year.

Please note that a responsible official for the site must complete the Certification of Truth, Accuracy and Completeness prior to submittal. If you have any questions regarding this report, please do not hesitate to telephone either of us at 703-471-6150.

Sincerely,

Amber Fidler
Staff Professional
**SCS ENGINEERS**

Joshua G. Roth, P.E.
Project Director
**SCS ENGINEERS**

# MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard, Suite 715 • Baltimore Maryland 21230-1720
(410) 537-3000 • 1-800-633-6101 • http://www.mde.state.md.us
Air and radiation Management Administration
Air Quality Compliance Program
(410) 537-3220

Report for Calendar Year: **2018**

| | |
|---|---|
| A. FACILITY IDENTIFICATION<br>Facility Name: **U.S. COAST GUARD YARD** | **Do Not Write in This Space**<br>Date Received Regional |
| Address **2401 HAWKINS POINT ROAD, MAIL STOP #10** | Date Received State |
| City **BALTIMORE** County **BALTIMORE** State **MD** Zip Code **21226-1797** | AIRS Code |
| B. Briefly Describe the Major Function of the Facility | FINDS Code |
| **COAST GUARD SHIPBUILDING AND REPAIR** | SIC Code |
| | Facility Number |
| | |
| | Source Latitude and Longitude |
| C. SEASONAL PRODUCTION (if applicable)<br>Winter (Dec.-Feb.) Spring (Mar.-May) Summer (June-Aug.) Fall (Sept.-Nov.)<br>**N/A** | Reviewed<br>Name<br>Date |

D. Explain any Increase/Decrease From Previous Calendar Year for Each Registration at this facility.

N/A

E. CONTROL DEVICE INFORMATION (for NOx and VOC sources only)

| Control Device | Capture Efficiency | Removal Efficiency |
|---|---|---|
| **N/A** | **N/A** | **N/A** |
| | | |
| | | |
| | | |

I am familiar with the premises and the installation and sources for which this report is submitted. I have personally examined the information in this report, which consist of pages (including attachments), and certify that the information is correct to the best of my knowledge.

LCDR John Adams, PE — Facility Engineer — Date
Name(Print/Type) — Title

Signature — Telephone

**FORM 2**

# CRITERIA AIR POLLUTANTS
# EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **VOCs** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **Boiler 15-5/ 4-0824** | | **Natural Gas** | **S** | **0.001** | **0.008** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-6/ 4-0825** | | **Natural Gas** | **S** | **0.002** | **0.012** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-3/ 5-0497** | | **Natural Gas** | **S** | **0.027** | **0.147** | **24** | **7** | **52** | **365** | **0.043** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 33-1/ 5-0746** | | **Natural Gas** | **S** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **C7[1]** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-5/ 4-0825** | | **Diesel** | **S** | **0.000** | **0.000** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-6/ 4-0825** | | **Diesel** | **S** | **0.004** | **0.019** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-3/ 5-0497** | | **Diesel** | **S** | **0.012** | **0.067** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Painting & Coating Operation 90-1/ 7/0055** | | **N/A** | **S** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | | | **F** | **17.825** | **95.819** | **24** | **7** | **52** | **365** | **95.819** | **24** | **Apr** | **Sept** | **C2** |
| **TOTAL** | | | | **See page 3** | | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Notes:
1. Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

FORM 2 CRITERIA AIR POLLUTANTS

## EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **VOCs** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **I/C Engine Generator 1/ 9-0889** | | **LFG** | **S** | **0.929** | **5.089** | **24** | **7** | **52** | **365** | **4.045** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **LFG** | **S** | **0.695** | **3.806** | **24** | **7** | **52** | **365** | **3.671** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **LFG** | **S** | **0.671** | **3.674** | **24** | **7** | **52** | **365** | **0.979** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **LFG** | **S** | **0.810** | **4.438** | **24** | **7** | **52** | **365** | **1.988** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **I/C Engine Generator 1/ 9-0889** | | **Natural Gas** | **S** | **1.192** | **6.532** | **24** | **7** | **52** | **365** | **3.649** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **Natural Gas** | **S** | **0.945** | **5.180** | **24** | **7** | **52** | **365** | **3.512** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **Natural Gas** | **S** | **0.477** | **2.615** | **24** | **7** | **52** | **365** | **1.080** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **Natural Gas** | **S** | **0.479** | **2.625** | **24** | **7** | **52** | **365** | **1.628** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **TOTALS from page 2 and 3 VOCs** | | | | **24.068** | **130.033** | | | | | **116.413** | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption Technique
A4-Solid Absorption Technique
A5-Frezing Out Technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID:. **24-003-00316** Pollutant: **SOx** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **Boiler 15-5/ 4-0824** | | **Natural Gas** | **S** | **0.000** | **0.001** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-6/ 4-0825** | | **Natural Gas** | **S** | **0.000** | **0.001** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-3/ 5-0497** | | **Natural Gas** | **S** | **0.003** | **0.016** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 33-1/ 5-0746** | | **Natural Gas** | **S** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **C7** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-5/ 4-0824** | | **Diesel** | **S** | **0.002** | **0.010** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-6/ 4-0825** | | **Diesel** | **S** | **0.441** | **2.417** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-3/ 5-0497** | | **Diesel** | **S** | **1.540** | **8.439** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **TOTAL** | | | | **See page 5** | | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source
TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.
Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Notes:
1. Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID:. **24-003-00316** Pollutant: **SOx** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **I/C Engine Generator 1/ 9-0889** | | **LFG** | **S** | **0.087** | **0.478** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **LFG** | **S** | **0.062** | **0.339** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **LFG** | **S** | **0.066** | **0.360** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **LFG** | **S** | **0.117** | **0.640** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **I/C Engine Generator 1/ 9-0889** | | **Natural Gas** | | **0.008** | **0.045** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **Natural Gas** | | **0.006** | **0.031** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **Natural Gas** | | **0.003** | **0.018** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **Natural Gas** | | **0.005** | **0.026** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **TOTALS from page 4 and 5 SOx** | | | | **2.339** | **12.821** | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source
TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.
Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **CO** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **Boiler 15-5/ 4-0824** | | **Natural Gas** | **S** | **0.021** | **0.116** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-6/ 4-0825** | | **Natural Gas** | **S** | **0.033** | **0.180** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-3/ 5-0497** | | **Natural Gas** | **S** | **0.409** | **2.242** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 33-1/ 5-0746** | | **Natural Gas** | **S** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **C7** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-5/ 4-0824** | | **Diesel** | **S** | **0.000** | **0.001** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-6/ 4-0825** | | **Diesel** | **S** | **0.052** | **0.284** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **Boiler 15-3/ 5-0497** | | **Diesel** | **S** | **0.181** | **0.990** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| **TOTAL** | | | | **See Page 7** | | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.
Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

1. Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **CO** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **I/C Engine Generator 1/ 9-0889** | | **LFG** | **S** | **9.654** | **52.896** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **LFG** | **S** | **6.548** | **35.880** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **LFG** | **S** | **5.220** | **28.601** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **LFG** | **S** | **8.622** | **47.242** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **I/C Engine Generator 1/ 9-0889** | | **Natural Gas** | | **12.390** | **67.889** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **Natural Gas** | | **8.913** | **48.837** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **Natural Gas** | | **3.715** | **20.357** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **Natural Gas** | | **5.100** | **27.945** | **24** | **7** | **52** | **365** | **N/A** | **N/A** | **N/A** | **N/A** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TOTALS from page 6 and 7 CO** | | | | **60.857** | **333.461** | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID:. **24-003-00316** Pollutant: **NOx** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **Boiler 15-5/ 4-0824** | | **Natural Gas** | **S** | **0.025** | **0.138** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-6/ 4-0825** | | **Natural Gas** | **S** | **0.039** | **0.214** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-3/ 5-0497** | | **Natural Gas** | **S** | **0.487** | **2.669** | **24** | **7** | **52** | **365** | **0.785** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 33-1/ 5-0746** | | **Natural Gas** | **S** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **C7** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-5/ 4-0824** | | **Diesel** | **S** | **0.001** | **0.005** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-6/ 4-0825** | | **Diesel** | **S** | **0.207** | **1.135** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **Boiler 15-3/ 5-0497** | | **Diesel** | **S** | **0.723** | **3.962** | **24** | **7** | **52** | **365** | **0.000** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | |
| **TOTAL** | | | | **See page 9** | | | | | | **See page 9** | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.
Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

1. Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

**FORM 2**

**CRITERIA AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID:. **24-003-00316** Pollutant: **NOx** Calendar Year: **2018**

| Equipment Description/ Registration No. | SCC Number | Fuel | | Actual Emissions | | Operating Schedule (Actual) | | | | TOSD | Operating Schedule | | | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Hrs/day | Days/wk | Wk/yr | Days/yr | Lbs/day | Hrs/day | Start | End | |
| **I/C Engine Generator 1/ 9-0889** | | **LFG** | **S** | **2.428** | **13.304** | **24** | **7** | **52** | **365** | **10.573** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **LFG** | **S** | **1.825** | **10.000** | **24** | **7** | **52** | **365** | **9.646** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **LFG** | **S** | **1.657** | **9.007** | **24** | **7** | **52** | **365** | **2.418** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **LFG** | **S** | **1.864** | **10.216** | **24** | **7** | **52** | **365** | **4.575** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **I/C Engine Generator 1/ 9-0889** | | **Natural Gas** | | **3.116** | **17.075** | **24** | **7** | **52** | **365** | **9.540** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 2/ 9-0890** | | **Natural Gas** | | **2.484** | **13.612** | **24** | **7** | **52** | **365** | **9.229** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 3/ 9-0891** | | **Natural Gas** | | **1.179** | **6.461** | **24** | **7** | **52** | **365** | **2.667** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I/C Engine Generator 4/ 9-0892** | | **Natural Gas** | | **1.103** | **6.043** | **24** | **7** | **52** | **365** | **3.746** | **24** | **Apr** | **Sept** | **C1/C3** |
| | | | | --- | --- | --- | --- | --- | --- | | --- | --- | --- | --- |
| **TOTALS from page 8 and 9 VOCs** | | | | **17.138** | **93.909** | | | | | **53.178** | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source
TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.
Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

**FORM 3**

**PM EMISSIONS CERTIFICATION REPORT**
**Particulate Matter**

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID#. **24-003-00316** Pollutant: **PM**

| Equipment Description/ Registration No. | SCC Number | Fuel | | PM-Filterable | | PM10-Filterable | | PM 2.5- Filterable | | PM Condensable | | Operation | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Day/yr | |
| **Boiler 15-5/ 4-0824** | | **Natural Gas** | **S** | **0.000** | **0.003** | **0.000** | **0.003** | **0.000** | **0.003** | **0.001** | **0.008** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **Boiler 15-6/ 4-0825** | | **Natural Gas** | **S** | **0.001** | **0.004** | **0.001** | **0.004** | **0.001** | **0.004** | **0.002** | **0.012** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **Boiler 15-3/ 5-0497** | | **Natural Gas** | **S** | **0.009** | **0.051** | **0.009** | **0.051** | **0.009** | **0.051** | **0.028** | **0.152** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **Boiler 33-1/ 5-0746** | | **Natural Gas** | **S** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Boiler 15-5/ 4-0824** | | **Diesel** | **S** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **Boiler 15-6/ 4-0825** | | **Diesel** | **S** | **0.021** | **0.113** | **0.021** | **0.113** | **0.021** | **0.113** | **0.013** | **0.074** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **Boiler 15-3/ 5-0497** | | **Diesel** | **S** | **0.072** | **0.396** | **0.072** | **0.396** | **0.072** | **0.396** | **0.047** | **0.258** | **365** | **C1/C3** |
| | | | **F** | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| **TOTAL** | | | | **See page 11** | | | | | | | | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

1. Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

**FORM 3**

**PM EMISSIONS CERTIFICATION REPORT**
**Particulate Matter**

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID#. **24-003-00316** Pollutant: **PM**

| Equipment Description/ Registration No. | SCC Number | Fuel | | PM-Filterable | | PM10-Filterable | | PM 2.5- Filterable | | PM Condensable | | Operation | Emission Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Tons/yr | Lbs/day | Day/yr | |
| **I/C Engine Generator 1/ 9-0889** | | **LFG** | **S** | **0.000** | **0.002** | **0.000** | **0.002** | **0.000** | **0.002** | **0.058** | **0.316** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 2/ 9-0890** | | **LFG** | **S** | **0.000** | **0.002** | **0.000** | **0.002** | **0.000** | **0.002** | **0.041** | **0.224** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 3/ 9-0891** | | **LFG** | **S** | **0.000** | **0.002** | **0.000** | **0.002** | **0.000** | **0.002** | **0.043** | **0.238** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 4/ 9-0892** | | **LFG** | **S** | **0.001** | **0.003** | **0.001** | **0.003** | **0.001** | **0.003** | **0.077** | **0.423** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 1/ 9-0889** | | **Natural Gas** | **S** | **0.001** | **0.006** | **0.001** | **0.006** | **0.001** | **0.006** | **0.139** | **0.760** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 2/ 9-0890** | | **Natural Gas** | **S** | **0.001** | **0.004** | **0.001** | **0.004** | **0.001** | **0.004** | **0.094** | **0.516** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 3/ 9-0891** | | **Natural Gas** | **S** | **0.000** | **0.002** | **0.000** | **0.002** | **0.000** | **0.002** | **0.056** | **0.308** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **I/C Engine Generator 4/ 9-0892** | | **Natural Gas** | **S** | **0.001** | **0.003** | **0.001** | **0.003** | **0.001** | **0.003** | **0.079** | **0.431** | **365** | **C1/C3** |
| | | | **F** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | | **---** |
| **TOTALS from page 10 and 11 PM** | | | | **0.107** | **0.593** | **0.107** | **0.593** | **0.107** | **0.593** | **0.678** | **3.719** | | |

S-Stack Emissions F-Fugitive Daily emissions (lbs/day) are lbs/operating day of the source

TOSD-Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **1,3-Butadiene ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.004** | **0.02** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.003** | **0.01** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.002** | **0.01** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.002** | **0.01** | **0.00** | **N/A** | **---** |
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| Totals | **0.011** | **0.05** | **0.00** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Acetaldehyde** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.1** | **0.6** | **0.0** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.1** | **0.4** | **0.0** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.0** | **0.3** | **0.0** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.1** | **0.4** | **0.0** | **N/A** | **---** |
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| Totals | **0.3** | **1.7** | **0.0** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Acrolein** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.07** | **0.394** | **0.016** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.05** | **0.268** | **0.011** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.03** | **0.160** | **0.007** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.04** | **0.224** | **0.009** | **N/A** | **---** |
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| Totals | **0.19** | **1.046** | **0.043** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Benzene ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.0** | **0.03** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.0** | **0.02** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.0** | **0.01** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.0** | **0.02** | **0.00** | **N/A** | **---** |
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| Totals | **0.0** | **0.08** | **0.00** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Biphenyl ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.0** | **0.02** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.0** | **0.01** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.0** | **0.01** | **0.00** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.0** | **0.01** | **0.00** | **N/A** | **---** |
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| Totals | **0.0** | **0.05** | **0.00** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Butyl Benzyl Phthalate** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0.0** | **0.22** | **0.01** | **N/A** | **---** |
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| Totals | **0.0** | **0.22** | **0.01** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Cumene ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0** | **1** | **0** | **N/A** | **---** |
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| Totals | **0** | **1** | **0** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4

**TOXIC AIR POLLUTANTS** Calendar Year: **2018**
EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Ethyl benzene ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **1** | **4** | **0** | **N/A** | **---** |
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| Totals | **1** | **4** | **0** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Ethylene Dibromide ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889 Natural Gas** | **0.001** | **0** | **0** | **N/A** | **---** |
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| Totals | **0.001** | **0** | **0** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS** **Calendar Year: 2018**

EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Formaldehyde** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Boiler 15-3/ 5-0497** **Natural Gas** | **0.00** | **0.007** | **0.000** | **N/A** | **---** |
| **I/C Engine Generator 1/ 9-0889** **Natural Gas** | **0.74** | **4.050** | **0.169** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890** **Natural Gas** | **0.50** | **2.748** | **0.115** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891** **Natural Gas** | **0.30** | **1.640** | **0.068** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892** **Natural Gas** | **0.42** | **2.296** | **0.096** | **N/A** | **---** |
| | | | | | |
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| Totals | **1.96** | **10.741** | **0.448** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS** **Calendar Year: 2018**

EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Hydrogen chloride** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889 LFG** | **0.04** | **0.241** | **0.010** | **N/A** | **---** |
| **I/C Engine Generator 2/ 9-0890 LFG** | **0.03** | **0.175** | **0.007** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891 LFG** | **0.03** | **0.173** | **0.007** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892 LFG** | **0.06** | **0.314** | **0.013** | **N/A** | **---** |
| | | | | | |
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| Totals | **0.16** | **0.903** | **0.037** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS** **Calendar Year: 2018**

EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Hydrogen sulfide ***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **I/C Engine Generator 1/ 9-0889 LFG** | **0.00** | **0.006** | **0.000** | | |
| **I/C Engine Generator 2/ 9-0890 LFG** | **0.00** | **0.004** | **0.000** | **N/A** | **---** |
| **I/C Engine Generator 3/ 9-0891 LFG** | **0.00** | **0.004** | **0.000** | **N/A** | **---** |
| **I/C Engine Generator 4/ 9-0892 LFG** | **0.00** | **0.007** | **0.000** | **N/A** | **---** |
| | | | | | |
| | | | | | |
| Totals | **0.00** | **0.021** | **0.000** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Lead and Compounds** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0.02** | **0.1081** | **0.0045** | **N/A** | **---** |
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| Totals | **0.02** | **0.1081** | **0.0045** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Toluene***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0** | **1** | **0** | **N/A** | **---** |
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| Totals | **0** | **1** | **0** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Triphenyl Phosphate** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0.0** | **0.22** | **0.01** | **N/A** | **---** |
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| Totals | **0.0** | **0.22** | **0.01** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Xylene** *

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **4** | **20.4** | **0.8** | **N/A** | **---** |
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| Totals | **4** | **20.4** | **0.8** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077

**FORM 4**

**TOXIC AIR POLLUTANTS**
EMISSIONS CERTIFICATION REPORT

Calendar Year: **2018**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Zinc Compounds***

| Equipment Description / Registration Number | Actual Emissions | | | Control Device** | % Efficiency |
|---|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | | |
| **Painting and Coating Operation/ 7-0055** | **0.2** | **1.02** | **0.04** | **N/A** | **---** |
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| Totals | **0.2** | **1.02** | **0.04** | | |

* Please attach all calculations

* See Attachment 1 for minimum reporting values

** Control Device
S = Scrubber,
B = Baghouse
ESP = Electrostatic Precipitator,
A = After Scrubber,
C = Condenser
AD = Adsorption
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

**FORM 5**

**BILLABLE TOXIC AIR POLLUTANTS**
**EMISSIONS CERTIFICATION REPORT**

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Calendar Year: **2018**

| Chemical Name | CAS Number | | Actual Emissions | | | | Estimation Method |
|---|---|---|---|---|---|---|---|
| | | | Tons/yr | Lbs/day | Lbs/hr | | |
| Carbon Disulfide | 75-15-0 | S | **0** | **0.0** | **0.0** | | C3 |
| | | F | **0** | **0.0** | **0.0** | | |
| Carbonyl Sulfide | 463-58-1 | S | **0** | **0.0** | **0.0** | | C3 |
| | | F | **0** | **0.0** | **0.0** | | |
| Chlorine | 7782-50-5 | S | **0.0** | **0.0** | **0** | | C3 |
| | | F | **0.0** | **0.0** | **0** | | |
| Cyanide Compounds | 57-12-5 | S | **0.0** | **0.00** | **0.00** | | C3 |
| | | F | **0.0** | **0.00** | **0.00** | | |
| Hydrogen Chloride | 7647-01-0 | S | **0.16** | **0.903** | **0.037** | | C3 |
| | | F | **0.0** | **0.0** | **0.0** | | |
| Hydrogen Fluoride | 7664-39-3 | S | **0.0** | **0.00** | **0.00** | | C3 |
| | | F | **0.0** | **0.00** | **0.00** | | |
| Methyl Chloroform | 71-55-6 | S | **0** | **0** | **0** | | C3 |
| | | F | **0** | **0** | **0** | | C3 |
| Methylene Chloride | 75-09-2 | S | **0.0** | **0.0** | **0.0** | | C3 |
| | | F | **0.0** | **0.0** | **0.0** | | |
| Perchloroethylene | 127-18-4 | S | **0.000** | **0.00** | **0.00** | | C3 |
| | | F | **0.000** | **0.00** | **0.00** | | |
| Phosphine | 7803-51-2 | S | **0.00** | **0.000** | **0.000** | | C3 |
| | | F | **0.00** | **0.000** | **0.000** | | |
| Titanium Tetrachloride | 7550-45-0 | S | **0.0** | **0.00** | **0.00** | | C3 |
| | | F | **0.0** | **0.00** | **0.00** | | |
| TOTALS | | | **0.17** | **0.908** | **0.038** | | |

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of the source

**Emission Estimation Method**

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption Technique
A4-Solid Absorption Technique
A5-Frezing Out Technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering judgment
C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

This form to include only the eleven chemicals identified

**Actual Emissions reported to the minimum reporting values specified by the MDE Attachment 1 Compounds are assumed to be negligible.**

**FORM 6: Greenhouse Gases**

**GREENHOUSE GAS AIR POLLUTANTS** Calendar Year: **2018**
EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Nitrous Oxide ($N_2O$)***

| Equipment Description / Registration Number[1] | Actual Emissions | | | Fuel |
|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | |
| **Boiler 15-5/ 4-0824** | **0.000** | **0.001** | **0.000** | **Natural Gas** |
| **Boiler 15-6/ 4-0825** | **0.000** | **0.001** | **0.000** | **Natural Gas** |
| **Boiler 15-3/ 5-0497** | **0.003** | **0.017** | **0.001** | **Natural Gas** |
| **Boiler 15-5/ 4-0824** | **0.000** | **0.000** | **0.000** | **Diesel** |
| **Boiler 15-6/ 4-0825** | **0.001** | **0.006** | **0.000** | **Diesel** |
| **Boiler 15-3/ 5-0497** | **0.004** | **0.022** | **0.001** | **Diesel** |
| **I/C Engine Generator 1/ 9-0889** | **0.008** | **0.044** | **0.002** | **LFG** |
| **I/C Engine Generator 2/ 9-0890** | **0.006** | **0.031** | **0.001** | **LFG** |
| **I/C Engine Generator 3/ 9-0891** | **0.006** | **0.033** | **0.001** | **LFG** |
| **I/C Engine Generator 4/ 9-0892** | **0.011** | **0.059** | **0.002** | **LFG** |
| **I/C Engine Generator 1/ 9-0889** | **0.003** | **0.017** | **0.001** | **Natural Gas** |
| **I/C Engine Generator 2/ 9-0890** | **0.002** | **0.011** | **0.000** | **Natural Gas** |
| **I/C Engine Generator 3/ 9-0891** | **0.001** | **0.007** | **0.000** | **Natural Gas** |
| **I/C Engine Generator 4/ 9-0892** | **0.002** | **0.010** | **0.000** | **Natural Gas** |
| **Totals** | **0.047** | **0.260** | **0.009** | |

This form must be used to report Greenhouse gas emissions:

- carbon dioxide ($CO_2$)
- methane ($CH_4$)
- nitrous oxide ($N_2O$)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF6)

* Use a separate form for each pollutants

* Please attach all calculations

**[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)**

**FORM 6: Greenhouse Gases**

**GREENHOUSE GAS AIR POLLUTANTS** Calendar Year: **2018**
EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Methane (CH4)***

| Equipment Description / Registration Number[1] | Actual Emissions | | | Fuel |
|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | |
| **Boiler 15-5/ 4-0824** | **0.001** | **0.003** | **0.000** | **Natural Gas** |
| **Boiler 15-6/ 4-0825** | **0.001** | **0.005** | **0.000** | **Natural Gas** |
| **Boiler 15-3/ 5-0497** | **0.011** | **0.061** | **0.003** | **Natural Gas** |
| **Boiler 15-5/ 4-0824** | **0.000** | **0.000** | **0.000** | **Diesel** |
| **Boiler 15-6/ 4-0825** | **0.002** | **0.012** | **0.001** | **Diesel** |
| **Boiler 15-3/ 5-0497** | **0.008** | **0.043** | **0.002** | **Diesel** |
| **I/C Engine Generator 1/ 9-0889** | **0.058** | **0.319** | **0.013** | **LFG** |
| **I/C Engine Generator 2/ 9-0890** | **0.041** | **0.226** | **0.009** | **LFG** |
| **I/C Engine Generator 3/ 9-0891** | **0.044** | **0.240** | **0.010** | **LFG** |
| **I/C Engine Generator 4/ 9-0892** | **0.078** | **0.427** | **0.018** | **LFG** |
| **I/C Engine Generator 1/ 9-0889** | **0.031** | **0.169** | **0.007** | **Natural Gas** |
| **I/C Engine Generator 2/ 9-0890** | **0.021** | **0.115** | **0.005** | **Natural Gas** |
| **I/C Engine Generator 3/ 9-0891** | **0.012** | **0.068** | **0.003** | **Natural Gas** |
| **I/C Engine Generator 4/ 9-0892** | **0.017** | **0.096** | **0.004** | **Natural Gas** |
| **Totals** | **0.326** | **1.783** | **0.075** | |

This form must be used to report Greenhouse gas emissions:

- carbon dioxide ($CO_2$)
- methane ($CH_4$)
- nitrous oxide ($N_2O$)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF6)

* Use a separate form for each pollutants

* Please attach all calculations

**[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)**

**FORM 6: Greenhouse Gases**

**GREENHOUSE GAS AIR POLLUTANTS** Calendar Year: **2018**
EMISSIONS CERTIFICATION REPORT

Facility Name: **USCG Baltimore Yard** Facility ID: **24-003-00316** Pollutant: **Carbon Dioxide (CO2)***

| Equipment Description / Registration Number[1] | Actual Emissions | | | Fuel |
|---|---|---|---|---|
| | Tons/yr | Lbs/day | Lbs/hour | |
| **Boiler 15-5/ 4-0824** | **30.258** | **165.797** | **6.908** | **Natural Gas** |
| **Boiler 15-6/ 4-0825** | **46.974** | **257.392** | **10.725** | **Natural Gas** |
| **Boiler 15-3/ 5-0497** | **584.514** | **3202.816** | **133.451** | **Natural Gas** |
| **Boiler 15-5/ 4-0824** | **0.992** | **5.438** | **0.227** | **Diesel** |
| **Boiler 15-6/ 4-0825** | **230.905** | **1265.235** | **52.718** | **Diesel** |
| **Boiler 15-3/ 5-0497** | **806.187** | **4417.463** | **184.061** | **Diesel** |
| **I/C Engine Generator 1/ 9-0889** | **669.414** | **3668.019** | **152.834** | **LFG** |
| **I/C Engine Generator 2/ 9-0890** | **474.333** | **2599.086** | **108.295** | **LFG** |
| **I/C Engine Generator 3/ 9-0891** | **503.610** | **2756.504** | **114.979** | **LFG** |
| **I/C Engine Generator 4/ 9-0892** | **895.363** | **4906.097** | **204.421** | **LFG** |
| **I/C Engine Generator 1/ 9-0889** | **1637.797** | **8974.228** | **373.926** | **Natural Gas** |
| **I/C Engine Generator 2/ 9-0890** | **111.394** | **6089.831** | **253.743** | **Natural Gas** |
| **I/C Engine Generator 3/ 9-0891** | **663.132** | **3633.602** | **151.400** | **Natural Gas** |
| **I/C Engine Generator 4/ 9-0892** | **928.562** | **5088..011** | **212.000** | **Natural Gas** |
| **Totals** | **8583.435** | **47032.519** | **1959.689** | |

This form must be used to report Greenhouse gas emissions:

- carbon dioxide ($CO_2$)
- methane ($CH_4$)
- nitrous oxide ($N_2O$)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF6)

* Use a separate form for each pollutants

* Please attach all calculations

**[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)**

# APPENDIX A
# BOILER (NSPS AND NON-NSPS) CALCULATIONS

**United States Coast Guard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Calculated by: AMF**
**Checked by: JGR**

**Table A-1**
**2018 NSPS Boiler Emissions for #2 FUEL OIL CONSUMPTION**
**(EU 03: Units 15-5 and 15-6)**

| EMISSION FACTORS FOR BOILERS | | |
|---|---|---|
| Compund | Factor | |
| NOx [2] | 20 | lb/$10^3$ gal |
| CO [2] | 5.0 | lb/$10^3$ gal |
| $CO_2$ [7] | 22,300 | lb/$10^3$ gal |
| $N_2O$ [6] | 0.11 | lb/$10^3$ gal |
| $PM_{cond}$[4] | 1.3 | lb/$10^3$ gal |
| $PM_{filter}$ [2] | 2.0 | lb/$10^3$ gal |
| $SO_2$ [1], [2] | 42.6 | lb/$10^3$ gal |
| VOC [9] | 0.34 | lb/$10^3$ gal |
| $CH_4$ [5] | 0.216 | lb/$10^3$ gal |

**NOTES:**

[1] To be conservative, sulfur content of the #2 fuel oil assumed to be 0.3%
[2] Factors taken from AP-42 Table 1.3-1 for Small Boilers with less than 100MMBtu/hr heat input
[3] Factors taken from AP-42 Table 1.4-2
[4] Factors taken from AP-42 Table 1.3-2 for No. 2 fuel oil
[5] Factors taken from AP-42 Table 1.3-3
[7] Factors taken from AP-42 Table 1.3-12 for No. 2 fuel oil
[8] PM total is equal to PM filter plus PM condensable
[9] AP-42 Table 1.3-3 does not have an emission factor for VOC. To be conservative, it was assumed that VOC is equal to NMTOC

| TOTAL #2 Fuel Oil Consumption in 2018 | | |
|---|---|---|
| Boiler 15-5 | 89 | gallons |
| Boiler 15-6 | 20,709 | gallons |

| OZONE SEASON (APR-SEPT) #2 Fuel Oil Consumption in 2018 | | |
|---|---|---|
| Boiler 15-5 | 0 | gallons |
| Boiler 15-6 | 0 | gallons |

| | Boiler 15-5 | | | | Boiler 15-6 | | | |
|---|---|---|---|---|---|---|---|---|
| **COMPOUND** | **TOTAL [tons/yr]** | **TOTAL [lbs/day]** | **TOTAL [lbs/hr]** | **APR- SEPT [lbs/day]** | **TOTAL [tons/yr]** | **TOTAL [lbs/day]** | **TOTAL [lbs/hr]** | **APR- SEPT [lbs/day]** |
| NOx [2] | 0.001 | 0.005 | 0.000 | 0.000 | 0.207 | 1.135 | 0.047 | 0.000 |
| CO [2] | 0.000 | 0.001 | 0.000 | | 0.052 | 0.284 | 0.012 | |
| CO2 [7] | 0.992 | 5.438 | 0.227 | | 230.905 | 1265.235 | 52.718 | |
| N2O [6] | 0.000 | 0.000 | 0.000 | | 0.001 | 0.006 | 0.000 | |
| PMcond[4] | 0.000 | 0.000 | 0.000 | | 0.013 | 0.074 | 0.003 | |
| PM filter [2] | 0.000 | 0.000 | 0.000 | | 0.021 | 0.113 | 0.005 | |
| SO2 [1], [2] | 0.002 | 0.010 | 0.000 | | 0.441 | 2.417 | 0.101 | |
| VOC [9] | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.019 | 0.001 | 0.000 |
| CH4 [5] | 0.000 | 0.000 | 0.000 | | 0.002 | 0.012 | 0.001 | |

**SAMPLE CALCULATIONS:**

NOx in tons per year
=(Emission factor, lb/$10^3$ gal) * (No. 2 Fuel Oil consumption, gallons/yr) * (1 ton/2000lbs)

NOx in lbs per day
=(Emission factor, lb/$10^3$ gal) * (No. 2 Fuel Oil consumption, gallons/yr) * (1 yr/ 365 days)

Ozone season emissions in lbs per day
=(Emission factor, lb/$10^3$ gal) * (No. 2 fuel oil consumption, gallons/season) * (1 yr/ 183 days)
**Number of days from April to September = 183 days

**United States Coast Guard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Calculated by: AMF**
**Checked by: JGR**

**Table A-2**
**2018 Non-NSPS Boiler Emissions for #2 FUEL OIL CONSUMPTION**
**(EU 02: Unit 15-3)**

**EMISSION FACTORS FOR BOILERS**

| Compund | Factor | |
|---|---|---|
| NOx [2] | 20 | lb/$10^3$ gal |
| CO [2] | 5.0 | lb/$10^3$ gal |
| $CO_2$ [7] | 22,300 | lb/$10^3$ gal |
| N2O [6] | 0.11 | lb/$10^3$ gal |
| $PM_{cond}$[4] | 1.3 | lb/$10^3$ gal |
| $PM_{filter}$ [2] | 2.0 | lb/$10^3$ gal |
| $SO_2$ [1], [2] | 42.6 | lb/$10^3$ gal |
| VOC [9] | 0.34 | lb/$10^3$ gal |
| $CH_4$ [5] | 0.216 | lb/$10^3$ gal |

**NOTES:**

[1] To be conservative, sulfur content of the #2 fuel oil assumed to be 0.3%

[2] Factors taken from AP-42 Table 1.3-1 for Small Boilers with less than 100MMBtu/hr heat input
[3] Factors taken from AP-42 Table 1.4-2
[4] Factors taken from AP-42 Table 1.3-2 for No. 2 fuel oil
[5] Factors taken from AP-42 Table 1.3-3
[7] Factors taken from AP-42 Table 1.3-12 for No. 2 fuel oil

[8] PM total is equal to PM filter plus PM condensable

[9] AP-42 Table 1.3-3 does not have an emission factor for VOC. To be conservative, it was assumed that VOC is equal to NMTOC

**TOTAL #2 Fuel Oil Consumption in 2018**

| | |
|---|---|
| Boiler 15-3 | 72,304 gallons |

**OZONE SEASON (APR-SEPT) #2 Fuel Oil Consumption in 2018**

| | |
|---|---|
| Boiler 15-3 | 0 gallons |

| COMPOUND | Boiler 15-3 TOTAL [tons/yr] | TOTAL [lbs/day] | TOTAL [lbs/hr] | APR- SEPT [lbs/day] |
|---|---|---|---|---|
| NOx [2] | 0.723 | 3.962 | 0.165 | 0.000 |
| CO [2] | 0.181 | 0.990 | 0.041 | |
| CO2 [7] | 806.187 | 4417.463 | 184.061 | |
| N2O [6] | 0.004 | 0.022 | 0.001 | |
| PMcond[4] | 0.047 | 0.258 | 0.011 | |
| PM filter [2] | 0.072 | 0.396 | 0.017 | |
| SO2 [1], [2] | 1.540 | 8.439 | 0.352 | |
| VOC [9] | 0.012 | 0.067 | 0.003 | 0.000 |
| CH4 [5] | 0.008 | 0.043 | 0.002 | |

**CALCULATIONS:**

NOx in tons per year
=(Emission factor, lb/$10^3$ gal) * (No. 2 Fuel Oil consumption, gallons/yr) * (1 ton/2000lbs)

NOx in lbs per day
=(Emission factor, lb/$10^3$ gal) * (No. 2 Fuel Oil consumption, gallons/yr) * (1 yr/ 365 days)

Ozone season emissions in lbs per day
=(Emission factor, lb/$10^3$ gal) * (No. 2 fuel oil consumption, gallons/season) * (1 yr/ 183 days)
**Number of days from April to September = 183 days

**United States Coast Guard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Calculated by: AMF**
**Checked by: JGR**

**Table A-3**
**2018 NSPS Boiler Emissions for NATURAL GAS CONSUMPTION**
**( EU-03: Units 15-5 and 15-6)**

**EMISSION FACTORS FOR BOILERS**

| Compund | Factor | |
|---|---|---|
| NOx [1] | 100 | lb/$10^6$ scf |
| CO [1] | 84.0 | lb/$10^6$ scf |
| $CO_2$ [2] | 120,000 | lb/$10^6$ scf |
| $N_2O$ [2] | 0.64 | lb/$10^6$ scf |
| $PM_{cond}$[2] | 5.7 | lb/$10^6$ scf |
| $PM_{filter}$ [2] | 1.9 | lb/$10^6$ scf |
| $SO_2$ [2] | 0.6 | lb/$10^6$ scf |
| VOC [2] | 5.5 | lb/$10^6$ scf |
| $CH_4$ [2] | 2.3 | lb/$10^6$ scf |

**NOTES:**

[1] Factors taken from AP-42 Table 1.4-1 for Small Boilers with less than 100MMBtu/hr heat input) and are Uncontrolled
[2] Factors taken from AP-42 Table 1.4-2
[3] Number of days from April to September = 183 days
[4] Days a year= 365

**TOTAL Natural Gas Consumption in 2018**

| | | |
|---|---|---|
| Boiler 15-5 | 5,043 | therms |
| | 504,300 | cubic feet |
| Boiler 15-6 | 7,829 | therms |
| | 782,900 | cubic feet |

**OZONE SEASON (APR-SEPT) Natural Gas Consumption in 2018**

| | | |
|---|---|---|
| Boiler 15-5 | 0 | therms |
| | 0 | cubic feet |
| Boiler 15-6 | 0 | therms |
| | 0 | cubic feet |

| | Boiler 15-5 | | | | Boiler 15-6 | | | |
|---|---|---|---|---|---|---|---|---|
| **COMPOUND** | **TOTAL [tons/yr]** | **TOTAL [lbs/day]** | **TOTAL [lbs/hr]** | **APR-SEPT [lbs/day]** | **TOTAL [tons/yr]** | **TOTAL [lbs/day]** | **TOTAL [lbs/hr]** | **APR- SEPT [lbs/day]** |
| NOx [1] | 0.025 | 0.138 | 0.006 | 0.000 | 0.039 | 0.214 | 0.009 | 0.000 |
| CO [1] | 0.021 | 0.116 | 0.005 | | 0.033 | 0.180 | 0.008 | |
| CO2 [2] | 30.258 | 165.797 | 6.908 | | 46.974 | 257.392 | 10.725 | |
| N2O [2] | 0.000 | 0.001 | 0.000 | | 0.000 | 0.001 | 0.000 | |
| PMcond[2] | 0.001 | 0.008 | 0.000 | | 0.002 | 0.012 | 0.001 | |
| PM filter [2] | 0.000 | 0.003 | 0.000 | | 0.001 | 0.004 | 0.000 | |
| SO2 [2] | 0.000 | 0.001 | 0.000 | | 0.000 | 0.001 | 0.000 | |
| VOC [2] | 0.001 | 0.008 | 0.000 | 0.000 | 0.002 | 0.012 | 0.001 | 0.000 |
| CH4 [2] | 0.001 | 0.003 | 0.000 | | 0.001 | 0.005 | 0.000 | |

**CALCULATIONS:**

NOx on tons per year
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/yr) * (1 ton/2000lbs)

NOx on lbs per day
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/yr) * (1 yr/ 365 days)

Ozone season emissions in lbs per day
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/season) * (1 yr/ 183 days)

**United States Coast Guard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Calculated by: AMF**
**Checked by: JGR**

**Table A-4**
**2018 Non NSPS Boiler Emissions for NATURAL GAS CONSUMPTION**
**( EU 02: Units 15-3 and 33-1)**

**EMISSION FACTORS FOR BOILERS**

| Compund | Factor | |
|---|---|---|
| NOx [1] | 100 | lb/$10^6$ scf |
| CO [1] | 84.0 | lb/$10^6$ scf |
| $CO_2$ [2] | 120,000 | lb/$10^b$ scf |
| N2O [2] | 0.64 | lb/$10^6$ scf |
| $PM_{cond}$[2] | 5.7 | lb/$10^b$ scf |
| $PM_{filter}$ [2] | 1.9 | lb/$10^b$ scf |
| $SO_2$ [2] | 0.6 | lb/$10^b$ scf |
| VOC [2] | 5.5 | lb/$10^6$ scf |
| $CH_4$ [2] | 2.3 | lb/$10^b$ scf |

**NOTES:**

[1] Factors taken from AP-42 Table 1.4-1 for Small Boilers with less than 100MMBtu/hr heat input) and are Uncontrolled
[2] Factors taken from AP-42 Table 1.4-2
[3] Days a year= 365

**TOTAL Natural Gas Consumption in 2018**

| | | |
|---|---|---|
| Boiler 15-3 | 97,419 | therms |
| | 9,741,900 | cubic feet |
| Boiler 33-1 | 0 | therms |
| | 0 | cubic feet |

Boiler 33-1 ceased operation and was decommissioned in October 2015 and was replaced with a new unit. The new replacement boiler is a Weil-McLain EG-55 natural gas-fired boiler rated at 0.2 MM Btu/hr. The new unit is considered an Insignificant Activity per Section V of our Part 70 Operating Permit – Fuel burning equipment using gaseous fuels or no. 1 or no. 2 fuel oil, and having a heat input less than 1,000,000 Btu (1.06 gigajoules) per hour.

**OZONE SEASON (APR-SEPT) Natural Gas Consumption in 2018**

| | | |
|---|---|---|
| Boiler 15-3 | 14,370 | therms |
| | 1,437,000 | cubic feet |
| Boiler 33-1 | 0 | therms |
| | 0 | cubic feet |

| COMPOUND | Boiler 15-3 TOTAL [tons/yr] | TOTAL [lbs/day] | TOTAL [lbs/hr] | APR- SEPT [lbs/day] | Boiler 33-1 TOTAL [tons/yr] | TOTAL [lbs/day] | TOTAL [lbs/hr] | APR- SEPT [lbs/day] |
|---|---|---|---|---|---|---|---|---|
| NOx [1] | 0.487 | 2.669 | 0.111 | 0.785 | 0.000 | 0.000 | 0.000 | 0.000 |
| CO [1] | 0.409 | 2.242 | 0.093 | | 0.000 | 0.000 | 0.000 | |
| CO2 [2] | 584.514 | 3202.816 | 133.451 | | 0.000 | 0.000 | 0.000 | |
| N2O [2] | 0.003 | 0.017 | 0.001 | | 0.000 | 0.000 | 0.000 | |
| PMcond[2] | 0.028 | 0.152 | 0.006 | | 0.000 | 0.000 | 0.000 | |
| PM filter [2] | 0.009 | 0.051 | 0.002 | | 0.000 | 0.000 | 0.000 | |
| SO2 [2] | 0.003 | 0.016 | 0.001 | | 0.000 | 0.000 | 0.000 | |
| VOC [2] | 0.027 | 0.147 | 0.006 | 0.043 | 0.000 | 0.000 | 0.000 | 0.000 |
| CH4 [2] | 0.011 | 0.061 | 0.003 | | 0.000 | 0.000 | 0.000 | |

**CALCULATIONS:**

NOx in tons per year
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/yr) * (1 ton/2000lbs)

NOx in lbs per day
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/yr) * (1 yr/ 365 days)

Ozone season emissions in lbs per day
=(Emission factor, lb/$10^6$ scf) * (Natural gas consumption, cubic feet/season) * (1 yr/ 183 days)
**Number of days from April to September = 183 days

# APPENDIX B
# PAINTING AND COATING OPERATION CALCULATIONS

**Calculated By: AMF**
**Checked By: JGR**

**United State Coast Gaurd Yard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Table B-1**
**2018 Painting Operation**
**(EU-01)**

| Description | Category | Total Gallons used [gallons] | VOC content in product [g/L] | Source of VOC content | VOC Emissions [lbs/yr] | [lbs/day] | [lbs/hour] | [tons/yr] |
|---|---|---|---|---|---|---|---|---|
| Amerlock 2/400 | Epoxy Coating | 1,679.00 | 180 | Site Personnel | 2,521.83 | 6.91 | 0.29 | 1.26 |
| Amercoat 235 | Antifoulant | 2,587.80 | 292 | Site Personnel | 6,305.31 | 17.27 | 0.72 | 3.15 |
| PSX 700 Siloxane | Epoxy Coating | 1,971.00 | 120 | Site Personnel | 1,973.61 | 5.41 | 0.23 | 0.99 |
| KL5000 | Epoxy Coating | 1,306.00 | 85 | Site Personnel | 926.31 | 2.54 | 0.11 | 0.46 |
| International 262 | Primer | 234.00 | 320 | Site Personnel | 624.83 | 1.71 | 0.07 | 0.31 |
| XLE-80 Siloxane | Epoxy Coating | 32.00 | 169 | Site Personnel | 45.13 | 0.12 | 0.01 | 0.02 |
| 302H Zinc | Primer | 1,914.00 | 312 | Site Personnel | 4,982.98 | 13.65 | 0.57 | 2.49 |
| ABC# 3 A/F | Antifoulant | 2,296.00 | 396 | Site Personnel | 7,586.82 | 20.79 | 0.87 | 3.79 |
| Internatinal 5624 | Antifoulant | 233.00 | 388 | Site Personnel | 754.36 | 2.07 | 0.09 | 0.38 |
| Seavoyage A/F | Antifoulant | 55.00 | 320 | Site Personnel | 146.86 | 0.40 | 0.02 | 0.07 |
| SW Enamel | Acrylic Enamel | 376.00 | 340 | Site Personnel | 1,066.74 | 2.92 | 0.12 | 0.53 |
| American Safety MS-7CZ | Primer | 348.00 | 240 | Site Personnel | 696.92 | 1.91 | 0.08 | 0.35 |
| American Safety MS-1600 | Coating | 529.00 | 52.6 | Site Personnel | 232.19 | 0.64 | 0.03 | 0.12 |
| American Safety MS-660G nonskid | Coating | 585.00 | 276 | Site Personnel | 1,347.28 | 3.69 | 0.15 | 0.67 |
| Sigma-shield 1200 | Epoxy Coating | 1,412.00 | 143 | Site Personnel | 1,684.86 | 4.62 | 0.19 | 0.84 |
| Formula 150 | Epoxy Polyamide | 43.00 | 340 | Site Personnel | 121.99 | 0.33 | 0.01 | 0.06 |
| 450 HSG Amercoat | Semi-gloss | 58.00 | 264 | Site Personnel | 127.77 | 0.35 | 0.01 | 0.06 |
| Caterpillar, white Engine | Enamel | 24.00 | 549 | Site Personnel | 109.95 | 0.30 | 0.01 | 0.05 |
| Caterpillar Yellow Spray | Enamel | 0.25 | 549 | Site Personnel | 1.15 | 0.00 | 0.00 | 0.00 |
| Glyptal, Red Insulating | Adhesive Cement | 2.75 | 601 | Site Personnel | 13.79 | 0.04 | 0.00 | 0.01 |
| Primer, white Rustoleum | Enamel | 10.65 | 156 | Site Personnel | 13.86 | 0.04 | 0.00 | 0.01 |
| Thinner[2,5] | Thinner | 2,894.33 | 882 | Site Personnel | 2,130.14 | 5.84 | 0.24 | 1.07 |
| Zinc Clad Plus II | Zinc Coating | 199.00 | 340 | Site Personnel | 564.58 | 1.55 | 0.06 | 0.28 |
| Silicone alkyd | Enamel | - | 318 | Site Personnel | 0.00 | 0.00 | 0.00 | 0.00 |
| #1317 - R. Brown | Aerosols | 2.13 | 569 | Site Personnel | 10.09 | 0.03 | 0.00 | 0.01 |
| Black, Enamel (aersols) | Enamel | 1.00 | 538 | Site Personnel | 4.49 | 0.01 | 0.00 | 0.00 |
| Primer, Krylon | Primer | 1.28 | 650 | Site Personnel | 6.92 | 0.02 | 0.00 | 0.00 |
| 240 high build spray | Epoxy | 804.38 | 145 | Site Personnel | 973.24 | 2.67 | 0.11 | 0.49 |
| 229 Buff | Special Marking | 16.00 | 384 | Site Personnel | 51.27 | 0.14 | 0.01 | 0.03 |
| 229 Black | Special Marking | 3.00 | 384 | Site Personnel | 9.61 | 0.03 | 0.00 | 0.00 |
| 229 White | Special Marking | 7.00 | 384 | Site Personnel | 22.43 | 0.06 | 0.00 | 0.01 |
| 385 high build epoxy | Inorganic High Build Epoxy | 78.00 | 312 | Site Personnel | 203.07 | 0.56 | 0.02 | 0.10 |
| 385 Red | Tact Coat | 35.00 | 312 | Site Personnel | 91.12 | 0.25 | 0.01 | 0.05 |
| 385 Grey | Tact Coat | 24.00 | 312 | Site Personnel | 62.48 | 0.17 | 0.01 | 0.03 |
| 385 White | Tact Coat | 20.00 | 312 | Site Personnel | 52.07 | 0.14 | 0.01 | 0.03 |
| 5450 White | Special Interior | 18.00 | 400 | Site Personnel | 60.08 | 0.16 | 0.01 | 0.03 |
| 5450 Dark Grey | Special Interior | 8.00 | 400 | Site Personnel | 26.70 | 0.07 | 0.00 | 0.01 |
| 5105 Grey | Special Interior | 2.00 | 279 | Site Personnel | 4.66 | 0.01 | 0.00 | 0.00 |
| 5105 Red | Special Interior | 2.00 | 279 | Site Personnel | 4.66 | 0.01 | 0.00 | 0.00 |
| Soft white chlorinated enamel | Enamel | 42.00 | 250 | Site Personnel | 87.62 | 0.24 | 0.01 | 0.04 |
| **Total** | | **19,853.55** | | | **34,973.986** | **95.819** | **3.992** | **17.825** |

**Notes:**

1. Data was gathered from USCG Baltimore Yard Semi-annual MACT/NESHAP reports (8/16/2018, 2/13/2019)
2. Thinners used include PPG Thinner (91-82 T-10), PPG Amercoat (21-06/65), PPG Amercoat (60-12/911), Sherwin William M.E.K. , Sherwin William high flash Naphtha, and Sunnyside Mineral Spirits
3. Product VOC content was provided by site personnel
4. For Pounds/day and pounds/hour calculations assume operations run 365 days per year, 8,760 hours per year
5. VOC emissions conservatively assume that 100% of the VOC contained in the product is emitted, except for the thinners. Thinner VOC emissions is assumed to be 10% due to product use in an enclosed system.

# APPENDIX C

# LANDFILL GAS ENGINE CALCULATIONS

**Table C-1**
**2018 I/C Engine 1 Generator Emssions Summary**
**EU 04**

**Calculated by: AMF**
**Checked by: JGR**

| Pollutant | LFG Emissions | | | | Natural Gas Emissions | | | |
|---|---|---|---|---|---|---|---|---|
| | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) |
| $NO_X$ | 2.428 | 13.304 | N/A | 10.573 | 3.116 | 17.075 | N/A | 9.540 |
| CO | 9.654 | 52.896 | N/A | | 12.390 | 67.889 | N/A | |
| $CO_2$ | 669.414 | 3,668.019 | 152.834 | | 1,637.797 | 8,974.228 | 373.926 | |
| $N_20$ | 0.008 | 0.044 | 0.002 | | 0.003 | 0.017 | 0.001 | |
| $PM_{COND}$ | 0.058 | 0.316 | N/A | | 0.139 | 0.760 | N/A | |
| $PM_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.006 | N/A | |
| $PM10_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.006 | N/A | |
| $PM2.5_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.006 | N/A | |
| $SO_2$ | 0.087 | 0.478 | N/A | | 0.008 | 0.045 | N/A | |
| VOC | 0.929 | 5.089 | N/A | 4.045 | 1.192 | 6.532 | N/A | 3.649 |
| $CH_4$ | 0.058 | 0.319 | 0.013 | | 0.031 | 0.169 | 0.007 | |

N/A - lbs/hr not required to be reported

| Pollutant Emission Factors (Engine 1) | | |
|---|---|---|
| **January to December 2018** | | |
| Pollutant | Value | Units |
| $NO_x$ | 3.429 | lb/hr[1] |
| CO | 8.711 | lb/hr[1] |
| VOC | 0.543 | lb/hr[1] |
| $CO_2$ | 115 | lb/MMBtu[3] |
| | 117 | lb/MMBtu[6] |
| $N_20$ | 0.001388889 | lb/MMBtu[3] |
| | 0.00022046 | lb/MMBtu[6] |
| $PM_{COND}$ | 0.00991 | lb/MMBtu[2] |
| $PM_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM10_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM2.5_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $SO_2$ | 0.015 | lbs/MMBtu[4] |
| | 0.000588 | lb/MMBtu[5] |
| $CH_4$ | 0.01 | lb/MMBtu[3] |
| | 0.0022 | lb/MMBtu[6] |

Notes:

1. Emission rate from November 2017 source testing by Montrose Air Quality Services (Engines 1, 2, 3, and 4 were tested)

2. Emission rate from AP-42, Chapter 3.2, Table 3.2-2.
3. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for biogas.
4. $SO_2$ emissions for LFG combustion calculated based on mass-balance, assumption of 46.9 ppmv sulfur concentration, and the higher heating value of methane.
5. $SO_2$ emission from NG based on emission factor from AP-42, Chapter 3.2, Table 3.2-2.
6. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for natural gas.
7. Emissions in lbs/day based on 365 days.
8. Emissions in lbs/hr based on 24 hours.
9. Ozone season emissions in lbs per day, number of days from April to September = 183 days
10. Starting October 2016 Engine 1, Engine 2, Engine 3, and Engine 4 are operating on a blend of LFG/NG

**Table C-2**
**2018 I/C Engine 2 Generator Emissions Summary**
**EU 04**

**Calculated by :AMF**
**Checked by: JGR**

| Pollutant | LFG Emissions | | | | Natural Gas Emissions | | | |
|---|---|---|---|---|---|---|---|---|
| | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) |
| $NO_X$ | 1.825 | 10.000 | N/A | 9.646 | 2.484 | 13.612 | N/A | 9.229 |
| CO | 6.548 | 35.880 | N/A | | 8.913 | 48.837 | N/A | |
| $CO_2$ | 474.333 | 2,599.086 | 108.295 | | 1,111.394 | 6,089.831 | 253.743 | |
| $N_20$ | 0.006 | 0.031 | 0.001 | | 0.002 | 0.011 | 0.000 | |
| $PM_{COND}$ | 0.041 | 0.224 | N/A | | 0.094 | 0.516 | N/A | |
| $PM_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.004 | N/A | |
| $PM10_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.004 | N/A | |
| $PM2.5_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.001 | 0.004 | N/A | |
| $SO_2$ | 0.062 | 0.339 | N/A | | 0.006 | 0.031 | N/A | |
| VOC | 0.695 | 3.806 | N/A | 3.671 | 0.945 | 5.180 | N/A | 3.512 |
| $CH_4$ | 0.041 | 0.226 | 0.009 | | 0.021 | 0.115 | 0.005 | |

N/A - lbs/hr not required to be reported

| Pollutant Emission Factors (Engine 2) | | |
|---|---|---|
| **January to December 2018** | | |
| Pollutant | Value | Units |
| $NO_X$ | 2.985 | lb/hr[1] |
| CO | 10.71 | lb/hr[1] |
| VOC | 1.136 | lb/hr[1] |
| $CO_2$ | 115 | lb/MMBtu[3] |
| | 117 | lb/MMBtu[6] |
| $N_20$ | 0.001388889 | lb/MMBtu[3] |
| | 0.00022046 | lb/MMBtu[6] |
| $PM_{COND}$ | 0.00991 | lb/MMBtu[2] |
| $PM_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM10_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM2.5_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $SO_2$ | 0.015 | lbs/MMBtu[4] |
| | 0.000588 | lb/MMBtu[5] |
| $CH_4$ | 0.01 | lb/MMBtu[3] |
| | 0.0022 | lb/MMBtu[6] |

Notes:

1. Emission rate from November 2017 source testing by Montrose Air Quality Services (Engines 1, 2, 3, and 4 were tested)

2. Emission rate from AP-42, Chapter 3.2, Table 3.2-2.
3. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for biogas.
4. $SO_2$ emissions for LFG combustion calculated based on mass-balance, assumption of 46.9 ppmv sulfur concentration, and the higher heating value of methane.
5. $SO_2$ emission from NG based on emission factor from AP-42, Chapter 3.2, Table 3.2-2.
6. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for natural gas.
7. Emissions in lbs/day based on 365 days.
8. Emissions in lbs/hr based on 24 hours.
9. Ozone season emissions in lbs per day, number of days from April to September = 183 days
10. Starting October 2016 Engine 1, Engine 2, Engine 3, and Engine 4 are operating on a blend of LFG/NG

**Table C-3**
**2018 I/C Engine 3 Generator Emissions Summary**

**Calculated By: AMF**
**Checked By: JGR**

**EU 04**

| Pollutant | LFG Emissions | | | | Natural Gas Emissions | | | |
|---|---|---|---|---|---|---|---|---|
| | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) |
| $NO_X$ | 1.657 | 9.077 | N/A | 2.418 | 1.179 | 6.461 | N/A | 2.667 |
| CO | 5.220 | 28.601 | N/A | | 3.715 | 20.357 | N/A | |
| $CO_2$ | 503.610 | 2,759.504 | 114.979 | | 663.132 | 3,633.602 | 151.400 | |
| $N_20$ | 0.006 | 0.033 | 0.001 | | 0.001 | 0.007 | 0.000 | |
| $PM_{COND}$ | 0.043 | 0.238 | N/A | | 0.056 | 0.308 | N/A | |
| $PM_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.000 | 0.002 | N/A | |
| $PM10_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.000 | 0.002 | N/A | |
| $PM2.5_{FILTER}$ | 0.000 | 0.002 | N/A | | 0.000 | 0.002 | N/A | |
| $SO_2$ | 0.066 | 0.360 | N/A | | 0.003 | 0.018 | N/A | |
| VOC | 0.671 | 3.674 | N/A | 0.979 | 0.477 | 2.615 | N/A | 1.080 |
| $CH_4$ | 0.044 | 0.240 | 0.010 | | 0.012 | 0.068 | 0.003 | |

N/A - lbs/hr not required to be reported

| Pollutant Emission Factors (Engine 3) | | |
|---|---|---|
| **January to December 2018** | | |
| Pollutant | Value | Units |
| $NO_X$ | 2.636 | lb/hr[1] |
| CO | 8.306 | lb/hr[1] |
| VOC | 1.067 | lb/hr[1] |
| $CO_2$ | 115 | lb/MMBtu[3] |
| | 117 | lb/MMBtu[6] |
| $N_20$ | 0.001388889 | lb/MMBtu[3] |
| | 0.00022046 | lb/MMBtu[6] |
| $PM_{COND}$ | 0.00991 | lb/MMBtu[2] |
| $PM_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM10_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM2.5_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $SO_2$ | 0.015 | lbs/MMBtu[4] |
| | 0.000588 | lb/MMBtu[5] |
| $CH_4$ | 0.01 | lb/MMBtu[3] |
| | 0.0022 | lb/MMBtu[6] |

Notes:

1. Emission rate from November 2017 source testing by Montrose Air Quality Services (Engines 1, 2, 3, and 4 were tested)
2. Emission rate from AP-42, Chapter 3.2, Table 3.2-2.
3. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for biogas.
4. $SO_2$ emissions for LFG combustion calculated based on mass-balance, assumption of 46.9 ppmv sulfur concentration, and the higher heating value of methane.
5. $SO_2$ emission from NG based on emission factor from AP-42, Chapter 3.2, Table 3.2-2.
6. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for natural gas.
7. Emissions in lbs/day based on 365 days.
8. Emissions in lbs/hr based on 24 hours.
9. Ozone season emissions in lbs per day, number of days from April to September = 183 days
10. Starting October 2016 Engine 1, Engine 2, Engine 3, and Engine 4 are operating on a blend of LFG/NG

**Table C-4**
**2018 I/C Engine 4 Generator Emissions Summary**
**EU 04**

**Calculated by: AMF**
**Checked by: JGR**

| Pollutant | LFG Emissions | | | | Natural Gas Emissions | | | |
|---|---|---|---|---|---|---|---|---|
| | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) | tons/year | lbs/day | lbs/hr | Ozone Season April - Sept (lbs/ day) |
| $NO_X$ | 1.864 | 10.216 | N/A | 4.575 | 1.103 | 6.043 | N/A | 3.746 |
| CO | 8.622 | 47.242 | N/A | | 5.100 | 27.945 | N/A | |
| $CO_2$ | 895.363 | 4,906.097 | 204.421 | | 928.562 | 5,088.011 | 212.000 | |
| $N_20$ | 0.011 | 0.059 | 0.002 | | 0.002 | 0.010 | 0.000 | |
| $PM_{COND}$ | 0.077 | 0.423 | N/A | | 0.079 | 0.431 | N/A | |
| $PM_{FILTER}$ | 0.001 | 0.003 | N/A | | 0.001 | 0.003 | N/A | |
| $PM10_{FILTER}$ | 0.001 | 0.003 | N/A | | 0.001 | 0.003 | N/A | |
| $PM2.5_{FILTER}$ | 0.001 | 0.003 | N/A | | 0.001 | 0.003 | N/A | |
| $SO_2$ | 0.117 | 0.640 | N/A | | 0.005 | 0.026 | N/A | |
| VOC | 0.810 | 4.438 | N/A | 1.988 | 0.479 | 2.625 | N/A | 1.628 |
| $CH_4$ | 0.078 | 0.427 | 0.018 | | 0.017 | 0.096 | 0.004 | |

N/A - lbs/hr not required to be reported

| Pollutant Emission Factors (Engine 4) | | |
|---|---|---|
| **January to December 2018** | | |
| Pollutant | Value | Units |
| $NO_x$ | 1.816 | lb/hr[1] |
| CO | 8.398 | lb/hr[1] |
| VOC | 0.789 | lb/hr[1] |
| $CO_2$ | 115 | lb/MMBtu[3] |
| | 117 | lb/MMBtu[6] |
| $N_20$ | 0.001388889 | lb/MMBtu[3] |
| | 0.00022046 | lb/MMBtu[6] |
| $PM_{COND}$ | 0.00991 | lb/MMBtu[2] |
| $PM_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM10_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $PM2.5_{FILTER}$ | 0.0000771 | lb/MMBtu[2] |
| $SO_2$ | 0.015 | lbs/MMBtu[4] |
| | 0.000588 | lb/MMBtu[5] |
| $CH_4$ | 0.01 | lb/MMBtu[3] |
| | 0.0022 | lb/MMBtu[6] |

Notes:

1. Emission rate from November 2017 source testing by Montrose Air Quality Services (Engines 1, 2, 3, and 4 were tested)

2. Emission rate from AP-42, Chapter 3.2, Table 3.2-2.
3. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for biogas.
4. $SO_2$ emissions for LFG combustion calculated based on mass-balance, assumption of 46.9 ppmv sulfur concentration, and the higher heating value of methane.
5. $SO_2$ emission from NG based on emission factor from AP-42, Chapter 3.2, Table 3.2-2.
6. Emission factor taken from the EPA GHG Reporting Rule, 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for natural gas.
7. Emissions in lbs/day based on 365 days.
8. Emissions in lbs/hr based on 24 hours.
9. Ozone season emissions in lbs per day, number of days from April to September = 183 days
10. Starting October 2016 Engine 1, Engine 2, Engine 3, and Engine 4 are operating on a blend of LFG/NG

# APPENDIX D
# AIR TOXIC EMISSIONS CALCULATIONS

## FOR BOILER (NSPS AND NON-NSPS), PAINTING AND COATING OPERATIONS, & LANDFILL GAS ENGINES

**United States Coast Guard**
**Baltimore Yard**
**Annual Emission Certification Report**

**Calculated by: AMF**
**Checked by: JGR**

**Table D-1**
**2018 Air Toxic Emissions - NSPS Boilers (NATURAL GAS)**
**(EU 03: Units 15-5 and 15-6)**

**User Inputs for NSPS Boilers:**

| | | |
|---|---|---|
| Natural gas consumption for Boiler 15-5 = | **504,300** | cubic feet |
| Natural gas consumption for Boiler 15-6 = | **782,900** | cubic feet |
| Days = | **365** | days |
| Hours = | **8,760** | hours |

| Pollutant | Emission Factor (lb/10^6 scf) | Source | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Boiler 15-5 (lb/day) | Boiler 15-6 (lb/day) | Boiler 15-5 (lb/hr) | Boiler 15-6 (lb/hr) | Boiler 15-5 (tpy) | Boiler 15-6 (tpy) |
| Acenaphthene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Acenapthylene | 1.80E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Anthracene | 2.40E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Arsenic & Compounds | 2.00E-04 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Benz(a)anthracene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Benzene | 2.10E-03 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Benzo(a)pyrene | 1.20E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.0000 | 0.0000 |
| Benzo(b)fluoranthene | 1.80E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.000 | 0.000 |
| Benzo(k)fluoranthene | 1.80E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Benzo(g,h,i)perylene | 1.20E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Beryllim & Compounds | 1.20E-05 | AP-42 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.0000 | 0.0000 |
| Cadmium & Compounds | 1.10E-03 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Chromium (Elemental) & Compounds | 1.40E-03 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Chrysene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Cobalt & Compounds | 8.40E-05 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.000 | 0.000 |
| Copper | 8.50E-04 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Dibenzo(a,h)anthracene | 1.20E-06 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 1,4-Dichlorobenzene (P) | 1.20E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fluoranthene | 3.00E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 |
| Fluorene | 2.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Formaldehyde | 7.50E-02 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| n-Hexane | 1.80E+00 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Indeno(1,2,3-cd)pyrene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Manganese & Compounds | 3.80E-04 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Mercury & Compounds | 2.60E-04 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.000 | 0.000 |
| Naphthalene | 6.10E-04 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nickel & Compounds | 2.10E-03 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Phenanthrene | 1.70E-05 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pyrene | 5.00E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Selenium & Compounds | 2.40E-05 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Toluene | 3.40E-03 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Zinc & Compounds | 2.90E-02 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.0 | 0.0 |

**Notes:**

1. Emission factors from AP-42 Table 1.4-3 and 1.4.4
2. It is assumed that chromium III and chromium VI are included in the Chromium (elemental) & Compounds calculation
3. AP-42 does not provide an emission factor for 1,4-Dichlorobenzene(P) therefore the emission factor for Dichlorobenze was used for estimating emissions
4. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
5. Emission in lb/day based on 365 days in year.
6. Emission in lb/hr based on 8,760 hours in year.

**United States Coast Guard**
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**Calculated by: AMF**
**Checked by: JGR**

**Table D-2**
**2018 Air Toxic Emissions - NON-NSPS Boilers (NATURAL GAS)**
**(EU 02: Units 15-3 and 33-1)**

**User Inputs for NON-NSPS Boilers:**

| | | |
|---|---|---|
| Natural gas consumption for Boiler 15-3 = | **1,437,000** | cubic feet |
| Natural gas consumption for Boiler 33-1 = | **0** | cubic feet |
| Days = | **365** | days |
| Hours = | **8,760** | hours |

| Pollutant | Emission Factor (lb/10^6 scf) | Source | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Boiler 15-3 (lb/day) | Boiler 33-1 (lb/day) | Boiler 15-3 (lb/hr) | Boiler 33-1 (lb/hr) | Boiler 15-3 (tpy) | Boiler 33-1 (tpy) |
| Acenaphthene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Acenapthylene | 1.80E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Anthracene | 2.40E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Arsenic & Compounds | 2.00E-04 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Benz(a)anthracene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Benzene | 2.10E-03 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Benzo(a)pyrene | 1.20E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.0000 | 0.0000 |
| Benzo(b)fluoranthene | 1.80E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.000 | 0.000 |
| Benzo(k)fluoranthene | 1.80E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Benzo(g,h,i)perylene | 1.20E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Beryllim & Compounds | 1.20E-05 | AP-42 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.0000 | 0.0000 |
| Cadmium & Compounds | 1.10E-03 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Chromium (Elemental) & Compounds | 1.40E-03 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Chrysene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Cobalt & Compounds | 8.40E-05 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.000 | 0.000 |
| Copper | 8.50E-04 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Dibenzo(a,h)anthracene | 1.20E-06 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 1,4-Dichlorobenzene (P) | 1.20E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fluoranthene | 3.00E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 |
| Fluorene | 2.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| **Formaldehyde** | 7.50E-02 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| **n-Hexane** | 1.80E+00 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Indeno(1,2,3-cd)pyrene | 1.80E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Manganese & Compounds | 3.80E-04 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Mercury & Compounds | 2.60E-04 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.000 | 0.000 |
| Naphthalene | 6.10E-04 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nickel & Compounds | 2.10E-03 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Phenanthrene | 1.70E-05 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pyrene | 5.00E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Selenium & Compounds | 2.40E-05 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Toluene | 3.40E-03 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Zinc & Compounds | 2.90E-02 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |

**Notes:**

1. Emission factors from AP-42 Table 1.4-3 and 1.4.4
2. It is assumed that chromium III and chromium VI are included in the Chromium (Elemental) & Compounds calculation
3. AP-42 does not provide an emission factor for 1,4-Dichlorobenzene(P) therefore the emission factor for Dichlorobenzne was used for estimating
4. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
5. Emission in lb/day based on 365 days in year.
6. Emission in lb/hr based on 8,760 hours in year.

**United States Coast Guard**
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**Calculated by: AMF**
**Checked by: JGR**

**Table D-3**
**2018 Air Toxic Emissions - NSPS Boilers (No. 2 Fuel Oil)**
**(EU 03: Units 15-5 and 15-6)**

**User Inputs for NSPS Boilers:**

| | | | | | |
|---|---|---|---|---|---|
| #2 Fuel oil consumption for Boiler 15-5 = | **89** | gallons | #2 Fuel oil consumption for Boiler 15-6 = | **20,709** | gallons |
| Days = | **365** | days | Days = | **365** | days |
| Hours = | **8,760** | hours | Hours = | **8,760** | hours |

| Pollutant | Emission Factor (lb/10^3 gal) | Source | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Boiler 15-5 (lb/day) | Boiler 15-6 (lb/day) | Boiler 15-5 (lb/hr) | Boiler 15-6 (lb/hr) | Boiler 15-5 (tpy) | Boiler 15-6 (tpy) |
| Acenaphthene | 2.11E-05 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Acenapthylene | 2.53E-07 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Anthracene | 1.22E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Benz(a)anthracene | 4.01E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Benzene | 2.14E-04 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 |
| Benzo(b)fluoranthene | 1.48E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 |
| Benzo(k)fluoranthene | 1.48E-06 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Benzo(g,h,i)perylene | 2.26E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Chrysene | 2.38E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Dibenzo(a,h)anthracene | 1.67E-06 | AP-42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Ethyl benzene | 6.36E-05 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fluoranthene | 4.84E-06 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fluorene | 4.47E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Formaldehyde | 3.30E-02 | AP-42 | 0.000 | 0.002 | 0.000 | 0.000 | 0.00 | 0.00 |
| Indeno(1,2,3-cd)pyrene | 2.14E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Methyl chloroform | 2.36E-04 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Naphthalene | 1.13E-03 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Phenanthrene | 1.05E-05 | AP-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pyrene | 4.25E-06 | AP-42 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 |
| Toluene | 6.20E-03 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| o-Xylene | 1.09E-04 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**Notes:**
1. Emission factors based on AP-42 Table 1.3-9
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Emission in lb/day based on 365 days in year.
4. Emission in lb/hr based on 8,760 hours in year.

**United States Coast Guard**
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**Calculated by: AMF**
**Checked by: JGR**

**Table D-4**
**2018 Air Toxic Emissions - NON NSPS Boilers (No. 2 Fuel Oil)**
**(EU 02: Unit 15-3)**

**User Inputs for NON-NSPS Boilers:**

| | | |
|---|---|---|
| #2 Fuel oil consumption for Boiler 15-3 = | **72,304** | gallons |
| Days = | **365** | days |
| Hours = | **8,760** | hours |

| Pollutant | Emission Factor (lb/10^3 gal) | Source | Total Air Toxic Emissions | | |
|---|---|---|---|---|---|
| | | | Boiler 15-3 (lb/day) | Boiler 15-3 (lb/hr) | Boiler 15-3 (tons/yr) |
| Acenaphthene | 2.11E-05 | AP-42 | 0.000 | 0.000 | 0.00 |
| Acenapthylene | 2.53E-07 | AP-42 | 0.00 | 0.00 | 0.0 |
| Anthracene | 1.22E-06 | AP-42 | 0.000 | 0.000 | 0.00 |
| Benz(a)anthracene | 4.01E-06 | AP-42 | 0.000 | 0.000 | 0.000 |
| Benzene | 2.14E-04 | AP-42 | 0.00 | 0.00 | 0.0 |
| Benzo(b)fluoranthene | 1.48E-06 | AP-42 | 0.0 | 0.0 | 0.000 |
| Benzo(k)fluoranthene | 1.48E-06 | AP-42 | 0.00 | 0.00 | 0.00 |
| Benzo(g,h,i)perylene | 2.26E-06 | AP-42 | 0.000 | 0.000 | 0.00 |
| Chrysene | 2.38E-06 | AP-42 | 0.000 | 0.000 | 0.00 |
| Dibenzo(a,h)anthracene | 1.67E-06 | AP-42 | 0.0000 | 0.0000 | 0.0000 |
| Ethyl benzene | 6.36E-05 | AP-42 | 0.0 | 0.0 | 0.0 |
| Fluoranthene | 4.84E-06 | AP-42 | 0.0 | 0.0 | 0.0 |
| Fluorene | 4.47E-06 | AP-42 | 0.000 | 0.000 | 0.00 |
| Formaldehyde | 3.30E-02 | AP-42 | 0.007 | 0.000 | 0.00 |
| Indeno(1,2,3-cd)pyrene | 2.14E-06 | AP-42 | 0.000 | 0.000 | 0.000 |
| Methyl chloroform | 2.36E-04 | AP-42 | 0.0 | 0.0 | 0.0 |
| Naphthalene | 1.13E-03 | AP-42 | 0.0 | 0.0 | 0 |
| Phenanthrene | 1.05E-05 | AP-42 | 0.00 | 0.00 | 0.00 |
| Pyrene | 4.25E-06 | AP-42 | 0.000 | 0.000 | 0.00 |
| Toluene | 6.20E-03 | AP-42 | 0 | 0 | 0 |
| o-Xylene | 1.09E-04 | AP-42 | 0 | 0 | 0 |

**Notes:**
1. Emission factors based on AP-42 Table 1.3-9
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Emission in lb/day based on 365 days in year.
4. Emission in lb/hr based on 8,760 hours in year.

**United States Coast Guard**
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**Calculated by: AMF**
**Checked by: JGR**

**Table D-5**
**2018 Air Toxic Emissions - Painting and Surface Coating Operations**
**(EU 01)**

**User Inputs:**

**Hours = 8,760**
**Days = 365**

| Pollutant | Amount generated [lbs/yr] | Total Air Toxic Emissions [tons/yr] | [lbs/day] | [lbs/hr] |
|---|---|---|---|---|
| Benzene | 0.0 | 0.0 | 0.00 | 0.00 |
| Butyl Benzyl Phthalate | 78.7 | 0.0 | 0.22 | 0.01 |
| Cobalt & Compounds | 0.0 | 0.000 | 0.0000 | 0.0000 |
| Copper | 0.0 | 0.00 | 0.000 | 0.000 |
| Cumene | 352.7 | 0 | 1 | 0 |
| 1,4-Dichlorobenzene (P) | 0.0 | 0.0 | 0 | 0 |
| Dibutyl phthalate | 1.0 | 0.0 | 0.00 | 0.00 |
| Epchlorohydrin | 0.0 | 0.0 | 0.00 | 0.00 |
| Ethyl benzene | 1,552.7 | 1 | 4 | 0 |
| Ethylene glycol | 0.0 | 0 | 0 | 0 |
| Formaldehyde | 0.0 | 0.00 | 0.000 | 0.000 |
| n-Hexane | 0.0 | 0 | 0 | 0 |
| Hydrogen fluoride | 0.0 | 0.0 | 0.00 | 0.00 |
| Hydroquinone | 0.0 | 0.0 | 0.00 | 0.00 |
| Lead & Compounds | 39.5 | 0.02 | 0.1081 | 0.0045 |
| Manganese & Compounds | 0.0 | 0.00 | 0.000 | 0.000 |
| Methanol | 0.0 | 0 | 0 | 0 |
| Methyl chloroform (1,1,1-Trichloroethane) | 0.0 | 0 | 0 | 0 |
| Methyl ethyl ketone (MEK) | 0.0 | 0 | 0 | 0 |
| Methyl isobutyl ketone (MIBK) | 0.0 | 0 | 0 | 0 |
| Methylene chloride | 0.0 | 0 | 0 | 0 |
| 4,4'-Methylenediphenyl diisocyanate (MDI) | 0.0 | 0.000 | 0.0000 | 0.0000 |
| Naphthalene | 0.0 | 0 | 0.0 | 0.0 |
| Phenol | 0.0 | 0 | 0.0 | 0.0 |
| Phthalic anhydride | 0.0 | 0.0 | 0.0 | 0.0 |
| PCB | 0.0 | 0.0 | 0.0 | 0.0 |
| Styrene | 4.6 | 0 | 0 | 0 |
| Tetrachloroethylene | 0.0 | 0 | 0 | 0 |
| Toluene | 446.3 | 0 | 1 | 0 |
| Trichloroethylene | 0.0 | 0 | 0 | 0 |
| Triphenyl Phosphate | 78.7 | 0.0 | 0.22 | 0.01 |
| Vinyl acetate | 0.0 | 0 | 0.0 | 0.0 |
| Xylene | 7,428.2 | 4 | 20.4 | 0.8 |
| Zinc compounds[4] | 371.4 | 0.2 | 1.02 | 0.04 |

Notes:
1. Air toxic emissions are based on product volumes and compostitions are based on records and product data sl
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Emissions based on the conservative assumption that 100% of HAP contained in product is emitted.
4. Amount generated (lbs/year) for metals based on the assumption that 5% of HAP contained in product is emitt
5. The MDE Tox-a-Matic 2012 spreadsheet was used to determine compliance with Toxics regulations.
6. Emission in lb/day based on 365 days in year.
7. Emission in lb/hr based on 8,760 hours in year.

**Table D-6**
**2018 Air Toxic Emissions**
**I/C Engine Generator 1 Emissions NG/LFG**
**EU 04**

**Engine 1**

| | | |
|---|---|---|
| Natural Gas Consumption for Engine 1 = | **27,208** | mSCF |
| Natural Gas Total Heat Input for Engine 1 = | **27,997** | MMBtu |
| LFG Consumption for Engine 1 = | **22,513** | mSCF |
| Control Efficiency for LFG Constituents= | **97** | % |
| Days = | **365** | days |
| Hours = | **8,760** | hours |

| | Emission Factor | | | | | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Natural Gas | Source | Landfill Gas | Molecular Weight | Source | Emissions from Natural Gas | | | Emissions from Landfill Gas | | |
| Pollutant | (lb/MMBtu) | | (ppmv)[3] | (g/mol) | | (lb/day) | (lb/hr) | (tpy) | (lb/day) | (lb/hr) | (tpy) |
| 1,1,2,2-Tetrachloroethane | 4.00E-05 | AP-42 | 1.11 | 167.85 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1,1,1-trichloroethane (methyl chloroform) | N/A | N/A | 0.48 | 133.41 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1-dichloroethane (ethylidene dichloride) | N/A | N/A | 2.35 | 98.97 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,1-dichloroethene (vinylidene chloride) | N/A | N/A | 0.20 | 96.94 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,2-dichloroethane (ethylene dichloride) | N/A | N/A | 0.41 | 98.96 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1,2-Trichloroethane | 3.18E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| 1,2-Dichloropropane | 2.69E-05 | AP-42 | 0.18 | 112.99 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1,3-Butadiene** | 2.67E-04 | AP-42 | N/A | N/A | N/A | **0.02** | 0.00 | **0.004** | N/A | N/A | N/A |
| 1,3-Dichloropropene | 2.64E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| 2,2,4-Trimethylpentane | 2.50E-04 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Acenaphthene | 1.25E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Acenaphthylene | 5.53E-06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.0 | N/A | N/A | N/A |
| **Acetaldehyde** | 8.36E-03 | AP-42 | N/A | N/A | N/A | **0.6** | 0.0 | **0.1** | N/A | N/A | N/A |
| **Acrolein** | 5.14E-03 | AP-42 | N/A | N/A | N/A | **0.394** | **0.016** | **0.07** | N/A | N/A | N/A |
| Acrylonitrile | N/A | N/A | 6.33 | 53.06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 |
| **Benzene** | 4.40E-04 | AP-42 | 1.91 | 78.11 | AP-42 | **0.03** | 0.00 | 0.0 | 0.00 | 0.00 | 0.0 |
| Benzo(b)fluoranthene | 1.66E-07 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.000 | N/A | N/A | N/A |
| Benzo(e)pyrene | 4.15E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.0000 | N/A | N/A | N/A |
| Benzo(g,h,i)perylene | 4.14E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Biphenyl** | 2.12E-04 | AP-42 | N/A | N/A | N/A | **0.02** | 0.00 | 0.0 | N/A | N/A | N/A |
| Carbon Disulfide | N/A | N/A | 0.58 | 76.13 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| Carbon Tetrachloride | 3.67E-05 | AP-42 | 0.00 | 153.84 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Carbonyl Sulfide | N/A | N/A | N/A | 60.07 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 3.04E-05 | AP-42 | 0.25 | 112.56 | AP-42 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 |
| Chloroform | 2.85E-05 | AP-42 | 0.03 | 119.39 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Chrysene | 6.93E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Ethylbenzene | 3.97E-05 | AP-42 | 4.61 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Ethylene Dibromide** | 4.43E-05 | AP-42 | 0.00 | 187.88 | AP-42 | 0 | 0 | **0.001** | 0 | 0 | 0.00 |
| Fluoranthene | 1.11E-06 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.0 | N/A | N/A | N/A |
| Fluorene | 5.67E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Formaldehyde** | 5.28E-02 | AP-42 | N/A | N/A | N/A | **4.050** | **0.169** | **0.74** | N/A | N/A | N/A |
| **Hydrogen Chloride** | N/A | N/A | 42.00 | 36.50 | AP-42 | N/A | N/A | N/A | **0.241** | **0.010** | **0.04** |
| **Hydrogen Sulfide** | N/A | N/A | 35.50 | 34.08 | AP-42 | N/A | N/A | N/A | **0.006** | 0.000 | 0.00 |
| Methanol | 2.50E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Methylene Chloride | 2.00E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Mercury | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Ethyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Isobutyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Hexane | N/A | N/A | 6.57 | 86.18 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| n-Hexane | 1.11E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Naphthalene | 7.44E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Phenanthrene | 1.04E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| Phenol | 2.40E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Pyrene | 1.36E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Perchloroethylene | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Styrene | 2.36E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Tetrachloroethane | 2.48E-06 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Toluene | 4.08E-04 | AP-42 | 39.30 | 92.13 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vinyl Chloride | 1.49E-05 | AP-42 | 7.34 | 62.50 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Xylene | 1.84E-04 | AP-42 | 12.10 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |

**Notes:**
1. Emission factors from AP-42 Table 3.2-2
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Concentrations taken from AP-42 tables 2.4-1 and 2.4-2.
4. Control efficiency taken from AP-42 Table 2.4-3.
5. Emission in lb/day based on 365 days in year.
6. Emission in lb/hr based on 8,760hours in year.

Calculated by: AMF
Checked by: JGR

**Table D-7**
**2018 Air Toxic Emissions**
**I/C Engine 2 Generator NG/LFG**
**EU 04**

**Engine 2**

Natural Gas Consumption for Engine 2 = **18,463** mSCF
Natural Gas Total Heat Input for Engine 2 = **18,998** MMBtu
LFG Consumption for Engine 2 = **16,316** mSCF
Control Efficiency for LFG Constituents= **97** %

Days = **365** days
Hours = **8,760** hours

| | Emission Factor | | | | | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Emissions from Natural Gas | | | Emissions from Landfill Gas | | |
| Pollutant | Natural Gas (lb/MMBtu) | Source | Landfill Gas (ppmv)[3] | Molecular Weight (g/mol) | Source | (lb/day) | (lb/hr) | (tpy) | (lb/day) | (lb/hr) | (tpy) |
| 1,1,2,2-Tetrachloroethane | 4.00E-05 | AP-42 | 1.11 | 167.85 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1,1,1-trichloroethane (methyl chloroform) | N/A | N/A | 0.48 | 133.41 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1-dichloroethane (ethylidene dichloride) | N/A | N/A | 2.35 | 98.97 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,1-dichloroethene (vinylidene chloride) | N/A | N/A | 0.20 | 96.94 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,2-dichloroethane (ethylene dichloride) | N/A | N/A | 0.41 | 98.96 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1,2-Trichloroethane | 3.18E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| 1,2-Dichloropropane | 2.69E-05 | AP-42 | 0.18 | 112.99 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1,3-Butadiene** | 2.67E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | **0.003** | N/A | N/A | N/A |
| 1,3-Dichloropropene | 2.64E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| 2,2,4-Trimethylpentane | 2.50E-04 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Acenaphthene | 1.25E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Acenaphthylene | 5.53E-06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.0 | N/A | N/A | N/A |
| **Acetaldehyde** | 8.36E-03 | AP-42 | N/A | N/A | N/A | **0.4** | 0.0 | **0.1** | N/A | N/A | N/A |
| **Acrolein** | 5.14E-03 | AP-42 | N/A | N/A | N/A | **0.268** | **0.011** | **0.05** | N/A | N/A | N/A |
| Acrylonitrile | N/A | N/A | 6.33 | 53.06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 |
| **Benzene** | 4.40E-04 | AP-42 | 1.91 | 78.11 | AP-42 | **0.02** | 0.00 | 0.0 | 0.00 | 0.00 | 0.0 |
| Benzo(b)fluoranthene | 1.66E-07 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.000 | N/A | N/A | N/A |
| Benzo(e)pyrene | 4.15E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.0000 | N/A | N/A | N/A |
| Benzo(g,h,i)perylene | 4.14E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Biphenyl** | 2.12E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | 0.0 | N/A | N/A | N/A |
| Carbon Disulfide | N/A | N/A | 0.58 | 76.13 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| Carbon Tetrachloride | 3.67E-05 | AP-42 | 0.00 | 153.84 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Carbonyl Sulfide | N/A | N/A | N/A | 60.07 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 3.04E-05 | AP-42 | 0.25 | 112.56 | AP-42 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 |
| Chloroform | 2.85E-05 | AP-42 | 0.03 | 119.39 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Chrysene | 6.93E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Ethylbenzene | 3.97E-05 | AP-42 | 4.61 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ethylene Dibromide | 4.43E-05 | AP-42 | 0.00 | 187.88 | AP-42 | 0 | 0 | 0.000 | 0 | 0 | 0.000 |
| Fluoranthene | 1.11E-06 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.0 | N/A | N/A | N/A |
| Fluorene | 5.67E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Formaldehyde** | 5.28E-02 | AP-42 | N/A | N/A | N/A | **2.748** | **0.115** | **0.50** | N/A | N/A | N/A |
| **Hydrogen Chloride** | N/A | N/A | 42.00 | 36.50 | AP-42 | N/A | N/A | N/A | **0.175** | **0.007** | **0.03** |
| **Hydrogen Sulfide** | N/A | N/A | 35.50 | 34.08 | AP-42 | N/A | N/A | N/A | **0.004** | 0.000 | 0.00 |
| Methanol | 2.50E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Methylene Chloride | 2.00E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Mercury | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Ethyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Isobutyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Hexane | N/A | N/A | 6.57 | 86.18 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| n-Hexane | 1.11E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Naphthalene | 7.44E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Phenanthrene | 1.04E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| Phenol | 2.40E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Pyrene | 1.36E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Perchloroethylene | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Styrene | 2.36E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Tetrachloroethane | 2.48E-06 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Toluene | 4.08E-04 | AP-42 | 39.30 | 92.13 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vinyl Chloride | 1.49E-05 | AP-42 | 7.34 | 62.50 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Xylene | 1.84E-04 | AP-42 | 12.10 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |

**Notes:**
1. Emission factors from AP-42 Table 3.2-2
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Concentrations taken from AP-42 tables 2.4-1 and 2.4-2.
4. Control efficiency taken from AP-42 Table 2.4-3.
5. Emission in lb/day based on 365 days in year.
6. Emission in lb/hr based on 8,760 hours in year.

**Table D-8**
**2018 Air Toxic Emissions**
**I/C Engine 3 Generator NG/LFG**
**EU 04**

**Engine 3**

Natural Gas Consumption for Engine 3 = **11,016** mSCF
Natural Gas Total Heat Input for Engine 3 = **11,336** MMBtu
LFG Consumption for Engine 3 = **16,192** mSCF
Control Efficiency for LFG Constituents= **97** %

Days = **365** days
Hours = **8,760** hours

| | Emission Factor | | | | | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Emissions from Natural Gas | | | Emissions from Landfill Gas | | |
| Pollutant | Natural Gas (lb/MMBtu) | Source | Landfill Gas (ppmv)[3] | Molecular Weight (g/mol) | Source | (lb/day) | (lb/hr) | (tpy) | (lb/day) | (lb/hr) | (tpy) |
| 1,1,2,2-Tetrachloroethane | 4.00E-05 | AP-42 | 1.11 | 167.85 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1,1,1-trichloroethane (methyl chloroform) | N/A | N/A | 0.48 | 133.41 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1-dichloroethane (ethylidene dichloride) | N/A | N/A | 2.35 | 98.97 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,1-dichloroethene (vinylidene chloride) | N/A | N/A | 0.20 | 96.94 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,2-dichloroethane (ethylene dichloride) | N/A | N/A | 0.41 | 98.96 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1,2-Trichloroethane | 3.18E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| 1,2-Dichloropropane | 2.69E-05 | AP-42 | 0.18 | 112.99 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| **1,3-Butadiene** | 2.67E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | **0.002** | N/A | N/A | N/A |
| 1,3-Dichloropropene | 2.64E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| 2,2,4-Trimethylpentane | 2.50E-04 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Acenaphthene | 1.25E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Acenaphthylene | 5.53E-06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.0 | N/A | N/A | N/A |
| **Acetaldehyde** | 8.36E-03 | AP-42 | N/A | N/A | N/A | **0.3** | 0.0 | 0.0 | N/A | N/A | N/A |
| **Acrolein** | 5.14E-03 | AP-42 | N/A | N/A | N/A | **0.160** | **0.007** | **0.03** | N/A | N/A | N/A |
| Acrylonitrile | N/A | N/A | 6.33 | 53.06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 |
| **Benzene** | 4.40E-04 | AP-42 | 1.91 | 78.11 | AP-42 | **0.01** | 0.00 | 0.0 | 0.00 | 0.00 | 0.0 |
| Benzo(b)fluoranthene | 1.66E-07 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.000 | N/A | N/A | N/A |
| Benzo(e)pyrene | 4.15E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.0000 | N/A | N/A | N/A |
| Benzo(g,h,i)perylene | 4.14E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Biphenyl** | 2.12E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | 0.0 | N/A | N/A | N/A |
| Carbon Disulfide | N/A | N/A | 0.58 | 76.13 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| Carbon Tetrachloride | 3.67E-05 | AP-42 | 0.00 | 153.84 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Carbonyl Sulfide | N/A | N/A | N/A | 60.07 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 3.04E-05 | AP-42 | 0.25 | 112.56 | AP-42 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 |
| Chloroform | 2.85E-05 | AP-42 | 0.03 | 119.39 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Chrysene | 6.93E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Ethylbenzene | 3.97E-05 | AP-42 | 4.61 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ethylene Dibromide | 4.43E-05 | AP-42 | 0.00 | 187.88 | AP-42 | 0 | 0 | 0.000 | 0 | 0 | 0.000 |
| Fluoranthene | 1.11E-06 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.0 | N/A | N/A | N/A |
| Fluorene | 5.67E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Formaldehyde** | 5.28E-02 | AP-42 | N/A | N/A | N/A | **1.640** | **0.068** | **0.30** | N/A | N/A | N/A |
| **Hydrogen Chloride** | N/A | N/A | 42.00 | 36.50 | AP-42 | N/A | N/A | N/A | **0.173** | **0.007** | **0.03** |
| **Hydrogen Sulfide** | N/A | N/A | 35.50 | 34.08 | AP-42 | N/A | N/A | N/A | **0.004** | 0.000 | 0.00 |
| Methanol | 2.50E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Methylene Chloride | 2.00E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Mercury | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Ethyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Isobutyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Hexane | N/A | N/A | 6.57 | 86.18 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| n-Hexane | 1.11E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Naphthalene | 7.44E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Phenanthrene | 1.04E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| Phenol | 2.40E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Pyrene | 1.36E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Perchloroethylene | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Styrene | 2.36E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Tetrachloroethane | 2.48E-06 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Toluene | 4.08E-04 | AP-42 | 39.30 | 92.13 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| Vinyl Chloride | 1.49E-05 | AP-42 | 7.34 | 62.50 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Xylene | 1.84E-04 | AP-42 | 12.10 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0.0 |

**Notes:**
1. Emission factors from AP-42 Table 3.2-2
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Concentrations taken from AP-42 tables 2.4-1 and 2.4-2.
4. Control efficiency taken from AP-42 Table 2.4-3.
6. Emission in lb/day based on 365 days in year.
7. Emission in lb/hr based on 8,760 hours in year.

Calculated by: AMF
Checked by: JGR

**Table D-9**
**2018 Air Toxic Emissions**
**I/C Engine 4 Generator NG/LFG**
**EU 04**

**Engine 4**

| | | |
|---|---|---|
| Natural Gas Consumption for Engine 4 = | **15,426** | mSCF |
| Natural Gas Total Heat Input for Engine 4 = | **15,873** | MMBtu |
| LFG Consumption for Engine 4 = | **29,323** | mSCF |
| Control Efficiency for LFG Constituents= | **97** | % |
| Days = | **365** | days |
| Hours = | **8,760** | hours |

| | Emission Factor | | | | | Total Air Toxic Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Natural Gas | Source | Landfill Gas | Molecular Weight | Source | Emissions from Natural Gas | | | Emissions from Landfill Gas | | |
| Pollutant | (lb/MMBtu) | | (ppmv)[3] | (g/mol) | | (lb/day) | (lb/hr) | (tpy) | (lb/day) | (lb/hr) | (tpy) |
| 1,1,2,2-Tetrachloroethane | 4.00E-05 | AP-42 | 1.11 | 167.85 | AP-42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1,1,1-trichloroethane (methyl chloroform) | N/A | N/A | 0.48 | 133.41 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1-dichloroethane (ethylidene dichloride) | N/A | N/A | 2.35 | 98.97 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,1-dichloroethene (vinylidene chloride) | N/A | N/A | 0.20 | 96.94 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| 1,2-dichloroethane (ethylene dichloride) | N/A | N/A | 0.41 | 98.96 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| 1,1,2-Trichloroethane | 3.18E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| 1,2-Dichloropropane | 2.69E-05 | AP-42 | 0.18 | 112.99 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1,3-Butadiene** | 2.67E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | **0.002** | N/A | N/A | N/A |
| 1,3-Dichloropropene | 2.64E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| 2,2,4-Trimethylpentane | 2.50E-04 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Acenaphthene | 1.25E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Acenaphthylene | 5.53E-06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.0 | N/A | N/A | N/A |
| **Acetaldehyde** | 8.36E-03 | AP-42 | N/A | N/A | N/A | **0.4** | 0.0 | **0.1** | N/A | N/A | N/A |
| **Acrolein** | 5.14E-03 | AP-42 | N/A | N/A | N/A | **0.224** | **0.009** | **0.04** | N/A | N/A | N/A |
| Acrylonitrile | N/A | N/A | 6.33 | 53.06 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 |
| **Benzene** | 4.40E-04 | AP-42 | 1.91 | 78.11 | AP-42 | **0.02** | 0.00 | 0.0 | 0.00 | 0.00 | 0.0 |
| Benzo(b)fluoranthene | 1.66E-07 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.000 | N/A | N/A | N/A |
| Benzo(e)pyrene | 4.15E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.0000 | N/A | N/A | N/A |
| Benzo(g,h,i)perylene | 4.14E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Biphenyl** | 2.12E-04 | AP-42 | N/A | N/A | N/A | **0.01** | 0.00 | 0.0 | N/A | N/A | N/A |
| Carbon Disulfide | N/A | N/A | 0.58 | 76.13 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 |
| Carbon Tetrachloride | 3.67E-05 | AP-42 | 0.00 | 153.84 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Carbonyl Sulfide | N/A | N/A | N/A | 60.07 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 3.04E-05 | AP-42 | 0.25 | 112.56 | AP-42 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 0 |
| Chloroform | 2.85E-05 | AP-42 | 0.03 | 119.39 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Chrysene | 6.93E-07 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Ethylbenzene | 3.97E-05 | AP-42 | 4.61 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ethylene Dibromide | 4.43E-05 | AP-42 | 0.00 | 187.88 | AP-42 | 0 | 0 | 0.000 | 0 | 0 | 0.000 |
| Fluoranthene | 1.11E-06 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0.0 | N/A | N/A | N/A |
| Fluorene | 5.67E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| **Formaldehyde** | 5.28E-02 | AP-42 | N/A | N/A | N/A | **2.296** | **0.096** | **0.42** | N/A | N/A | N/A |
| **Hydrogen Chloride** | N/A | N/A | 42.00 | 36.50 | AP-42 | N/A | N/A | N/A | **0.314** | **0.013** | **0.06** |
| **Hydrogen Sulfide** | N/A | N/A | 35.50 | 34.08 | AP-42 | N/A | N/A | N/A | **0.007** | 0.000 | 0.00 |
| Methanol | 2.50E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Methylene Chloride | 2.00E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Mercury | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Ethyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Methyl Isobutyl Ketone | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Hexane | N/A | N/A | 6.57 | 86.18 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 |
| n-Hexane | 1.11E-03 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Naphthalene | 7.44E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Phenanthrene | 1.04E-05 | AP-42 | N/A | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A | N/A | N/A |
| Phenol | 2.40E-05 | AP-42 | N/A | N/A | N/A | 0.0 | 0.0 | 0 | N/A | N/A | N/A |
| Pyrene | 1.36E-06 | AP-42 | N/A | N/A | N/A | 0.000 | 0.000 | 0.00 | N/A | N/A | N/A |
| Perchloroethylene | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Styrene | 2.36E-05 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Tetrachloroethane | 2.48E-06 | AP-42 | N/A | N/A | N/A | 0 | 0 | 0 | N/A | N/A | N/A |
| Toluene | 4.08E-04 | AP-42 | 39.30 | 92.13 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vinyl Chloride | 1.49E-05 | AP-42 | 7.34 | 62.50 | AP-42 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0.00 |
| Xylene | 1.84E-04 | AP-42 | 12.10 | 106.16 | AP-42 | 0 | 0 | 0 | 0 | 0 | 0 |

**Notes:**
1. Emission factors from AP-42 Table 3.2-2
2. Significant figures for lb/hr and tons/yr is based on the MDE 192 Air toxics list for reporting.
3. Concentrations taken from AP-42 tables 2.4-1 and 2.4-2.
4. Control efficiency taken from AP-42 Table 2.4-3.
6. Emission in lb/day based on 365 days in year.
7. Emission in lb/hr based on 8,760 hours in year.

# APPENDIX C

## Permit to Construct (Permit No. 9-1185)

## Emission Point #2: Engine #2

003-0316; AI# 1792

Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

OCT 0 1 2019

LCDR John Adams, PE - Facility Engineer
U.S. Coast Guard Yard Baltimore
2401 Hawkins Point Rd
Baltimore, Maryland 21226-1797

Dear LCDR Adams:

Enclosed please find the Permit to Construct for the installation of one (1) 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator to be located at U.S. Coast Guard Yard Baltimore, 2401 Hawkins Point Rd, Curtis Bay, Maryland 21226. The proposed unit shall replace an identical existing unit (Reg. No. 003-0316-9-0890). The permit contains both general conditions, which apply to all air quality permit holders in Maryland, and specific conditions, which apply to the specific generator (Reg. No. 9-1185) that you have proposed to install.

The installation of the generator qualifies as an "Off-Permit" change to the facility's Part 70 operating permit. The Department recognizes the permit to construct application as written notification of the proposed change. Please include the generator in the application for the next renewal of the Part 70 permit.

If you have any questions regarding the issuance of this permit, please contact Mr. Mario Cora at (410) 537-3225.

Sincerely,

William V. Paul, Division Chief
Combustion & Metallurgical Division
Air Quality Permits Program
Air and Radiation Administration

WVP/dar
Enclosure

**KEEP PERMIT AT SITE** **CONTROL NO. B- 05879**

State of Maryland

Lawrence J. Hogan, Jr.
Governor

Boyd K. Rutherford
Lt. Governor

Ben Grumbles
Secretary

**DEPARTMENT OF THE ENVIRONMENT**

Air and Radiation Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

[X] Construction Permit [ ] Operating Permit

PERMIT NO. 003-0316-9-1185

DATE ISSUED OCT 0 1 2019

PERMIT FEE $2,000.00 (Paid)

EXPIRATION DATE In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS

U.S. Coast Guard
2401 Hawkins Point Rd
Curtis Bay, Maryland 21226

Attention: LCDR John Adams, PE
Facility Engineer

SITE

U.S. Coast Guard Yard - Baltimore
2401 Hawkins Point Rd
Curtis Bay, MD 21226

Anne Arundel County
Premises #003-0316
AI # 1792

SOURCE DESCRIPTION

Installation of one (1) 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator.

Note: The unit replaces an existing unit (Reg. No. 003-0316-9-0890).

This source is subject to the conditions described on the attached pages.



William Paul
Program Manager

Angela Gruber
Director, Air and Radiation Administration

**INDEX**



## Part A – General Provisions

(1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:

Application for Fuel Burning Equipment (Form 11) for the installation of one (1) 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator, received on May 03, 2019. The unit shall replace an identical existing unit (Reg. # 9-0891; Engine No. 2).

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

(2) Upon presentation of credentials, representatives of the Maryland Department of the Environment ("MDE" or the "Department") and the Anne Arundel County Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee's property and permitted to:

(a) inspect any construction authorized by this permit;

(b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;

(c) inspect any monitoring equipment required by this permit;

(d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit; and

(e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit.

(3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the

Department determines that such increases or changes constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.

(4) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.

(5) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.

(6) The Permittee shall comply with all applicable requirements of the current Title V-Part 70 Operating Permit # 24-003-00316.

(7) The addition of the 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator qualifies as an "Off-Permit" change to the facility's Part 70 operating permit. The Department recognizes the permit to construct application as written notification of the proposed change and should be included in the application for the next renewal of the Part 70 permit.

## Part B – Applicable Regulations

(1) This source is subject to all applicable federal air pollution control requirements including, but not limited to, the following:

(a) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in federal New Source Performance Standards (NSPS) promulgated under 40 CFR 60, Subparts A and **Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.**

**§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?**
(e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE.

**Emission Standards for Owners and Operators**
**Table 1 to Subpart JJJJ of Part 60 - $NO_X$, CO, and VOC Emission Standards for Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG) ...and Stationary Emergency Engines >25 HP**

| Engine type and fuel | Maximum engine power | Manufacture date | Emission standards [a] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | g/HP-hr | | | ppmvd at 15% $O_2$ | | |
| | | | $NO_X$ | CO | VOC [d] | $NO_X$ | CO | VOC [d] |
| Non-Emergency SI Natural Gas | HP≥500 | On or after 07/01/2010 | 1.0 | 2.0 | 0.7 | 82 | 270 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Landfill/Digester Gas (except lean burn 500≥HP<1,350** | HP≥500 | On or after 7/1/2010 | **2.0** | **5.0** | **1.0** | **150** | **610** | **80** |

**a** Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O2.

**b** Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

**c** The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of $NO_X$+ HC.

**d** For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.
[76 FR 37975, June 28, 2011}

**§60.4234 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?** Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

**Note:** For the purpose of this permit, a landfill gas (LFG) fired engine is defined as an engine that fires LFG at 10 percent or more of the gross heat input on an annual basis.

(b) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in the National Emissions Standards for Hazardous Air Pollutants (NESHAP) promulgated under 40 CFR 63, Subparts A and ZZZZ for Reciprocating Internal Combustion Engines (RICE).

**Note:** The Permittee shall meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for Stationary Compression Ignition Internal Combustion Engines or Subpart JJJJ for spark ignition engines. No further requirements apply to the engine under 40 CFR, Part 63, Subpart ZZZZ. [Reference: 40 CFR §63.6590(c)(1)]

(d) All notifications required under 40 CFR 60 or 63, Subparts A and ZZZZ shall be submitted to both of the following:

The Administrator
Compliance Program
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard, STE 715
Baltimore MD 21230

and

Director, Air Protection Division
U.S. EPA – Region 3
Mail Code 3AP00
1650 Arch Street
Philadelphia, PA 19103-2029

(2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.01.05 – 1, which requires that the Permittee submit an annual certification of emissions for volatile organic compounds (VOC) and nitrogen oxides ($NO_x$).

(b) COMAR 26.11.01.07C, Report of Excess Emissions.
(1) "In the case of any occurrence of excess emissions, expected to last or actually lasting for 1 hour or more, from any installation required by COMAR 26.11.02.13 to obtain a State permit to operate, the owner or operator shall report the onset and shall report the termination of the occurrence to the Department by telephone."
(2) "Telephone reports of excess emissions shall include the following information:
(a) The identity of the installation and the person reporting;
(b) The nature or characteristics of the emissions (for example, hydrocarbons, fluorides);
(c) The time of occurrence of the onset of the excess emissions and the actual or expected duration of the occurrence; and
(d) The actual or probable cause of the excess emissions."

(c) COMAR 26.11.01.04A - Requirements for Testing.
"(1) The Department may require any person to conduct or have conducted testing to determine compliance with this subtitle. The Department, at its option, may witness or conduct these tests. This testing will be done at a reasonable time, and all information gathered during a testing operation will be provided to both parties."

(d) COMAR 26.11.02.04B, Permits to Construct and Approvals. "A permit to construct or an approval expires if, as determined by the Department:
(1) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;
(2) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or
(3) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval."

(e) COMAR 26.11.02.09A, Sources Subject to Permits to Construct and Approvals. "A person may not construct or modify or cause to be constructed or modified any of the following sources without first obtaining, and having in current effect, the specified permits to construct and approvals: (6) All sources, including installations and air pollution control equipment, except as listed in Regulation .10 of this chapter—permit to construct required."

Visible Emissions

(f) COMAR 26.11.09.05E (2) which prohibits emissions from internal combustion engines greater than 10 percent opacity while operating at idle.

(g) COMAR 26.11.09.05E (3) which prohibits emissions from internal combustion engines greater than 40 percent opacity while operating during non-idle conditions.

(h) COMAR 26.11.09.05E (4), *Exceptions to Visible Emissions Standards for I/C Engines*:

(i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(ii) COMAR 26.11.09.05E(3) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(1) Engines that are idled continuously when not in service: 30 minutes,

(2) All other engines: 15 minutes.

(iii) COMAR 26.11.09.05E(2) & (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics.

(3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.06.08, Nuisance. "An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution."

(b) COMAR 26.11.06.09, Odors. "A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that a nuisance or air pollution is created."

## Part C – Construction Conditions

(1) Except as otherwise provided in this part, the 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator shall be constructed in accordance with specifications included in the incorporated application.

(2) The Jenbacher COGEN unit's stack shall be equipped with appropriate test ports to allow for stack testing as cited under Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests.

(3) The Permittee must install a non-resettable hour meter for each engine prior to start-up of the engine(s). **[§ 60.4237]**

## Part D – Operating Conditions

(1) Except as otherwise provided in this part, the 1.063 MW (1468 BHP) GE Jenbacher dual (natural gas/landfill gas) fired, spark ignition (SI) ICE engine/generator shall be operated in accordance with specifications included in the application and any operating procedures recommended by equipment vendors unless the Permittee obtains from the Department written authorization for alternative operating procedures.

(2) The Permittee shall keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engines and oxidation catalyst in a manner consistent with good air pollution control practice for minimizing emissions.
**[Ref: 40 CFR Subpart JJJJ §60.4243 (b)(2)(ii)]**

(3) The Permittee shall burn only natural gas and/or landfill gas (LFG) in the engine/generators.

(4) The Permittee shall fire LFG at 10 percent or more of the gross heat input on an annual basis, in order to be subject to the NSPS JJJJ LFG emissions standards. If not, then the engines must satisfy the emissions limits and requirements for natural gas fired engines.

## Part E - Major New Source Review (NSR) Synthetic-Minor Limitation

(1) In order to exempt the four-(4) GE Jenbacher 320 engine/generators from the requirements of COMAR 26. 11. 17 - Requirements for Major New Sources and Modifications, and prevent the engine sets from operating as a "Major Modification" with a "significant net emissions increase of VOC or NOx as defined under COMAR 26.11.17.01B, the Permittee shall limit the NOx and VOC emissions from the four-(4) landfill-gas fired generator sets to less than 25 tons per year, for any 12-month consecutive period.

(2) In order to demonstrate compliance with the emissions limitations requirement for exemption from NSR, the Permittee shall calculate and record the emissions from the four-(4) landfill-gas/NG fired, GE Jenbacher 320 engine/generators, for each previous calendar month and a total for the previous 12 consecutive calendar months. The calculations and records shall be updated monthly, within the first 15 days of each following month.

**[Ref.: Permit-to-Construct (PTC) No. 003-0316-9-0889 through 9-0892 A, issued 1/20/2011]**

## Part F – Notifications, Testing, and Monitoring Requirements

Notifications

(1) In accordance with **40 CFR § 60.7**, the Permittee shall provide the Department written notification or, if acceptable to both the Department and the owner or operator of a source, electronic notification, as follows:

(a) A notification of the date of construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date.

(b) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(c) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator (the Department) may request additional relevant information subsequent to this notice.

(d) A notification of the anticipated date for conducting the opacity observations required by §60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a

visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(2) The Permittee shall notify the Department at least 30 days prior to any performance test, to afford the Department the opportunity to have an observer present. **[Reference: 40 CFR §60.8(d)]**

The Permittee shall provide the Department with a copy of the test protocol at least 30 days prior to any scheduled performance tests.
**[Reference: COMAR 26.11.01.04]**

Testing Requirements for Owners and Operators:

(3) The Permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance with the emissions standards of 40 CFR 60, Subpart JJJJ, Table 1. **[Ref: 40 CFR §60.4243(b)(2)(ii)]**

(4) The Permittee shall conduct an initial performance test within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s). **[Reference: 40 CFR §60.8(a)]**

(5) The Permittee must follow the following procedures when conducting performance tests:

(a) The performance test must be conducted according to the specifications of 40 CFR §60.4344. **[Reference: 40 CFR 60.4244]**

(b) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in 40 CFR Part 60.8 and under the specific conditions that are specified by Table 2 in 40 CFR Part 60 Subpart JJJJ.

(c) The Permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI ICE is non-operational, the Permittee does not need to startup the engine solely to conduct a performance test; however, the Permittee must conduct the performance test immediately upon startup of the engine.

(d) The Permittee must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(e) To determine compliance with the $NO_X$ mass per unit output emission limitation, convert the concentration of $NO_X$ in the engine exhaust using Equation 1 of 40 CFR §60.4244.

(f) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of 40 CFR §60.4244.

(g) When calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of 40 CFR §60.4244.

**[Ref: 40 CFR §60.4244(a)-(f)]**

(6) **§60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?**

**(a)** Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.
(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

**(b)** For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. ...The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

**(c)** Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

**(d)** Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed. Performance test reports using EPA Method 18, EPA Method 320, or ASTM D6348-03 (incorporated by reference—see 40 CFR 60.17) to measure VOC require reporting of all QA/QC data. For Method 18, report results from sections 8.4 and 11.1.1.4; for Method 320, report results from sections 8.6.2, 9.0, and 13.0; and for ASTM D6348-03 report results of all QA/QC procedures in Annexes 1-7.

**(e)** {Not applicable}

Monitoring
If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to *10 percent or more of the gross heat input on an annual basis*, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.
**[Ref.: §63.6625 (c) What are my monitoring, installation, collection, operation, and maintenance requirements?]**

## Part F – Record Keeping and Reporting Requirements

Record Keeping

(1) The Permittee shall maintain the following records on site for at least five (5) years and they shall be made available to the Department upon request:

(a) The operating hours for each generator,

(b) Monthly records of fuel use, and

(c) A copy of the generator's and operations and maintenance manual, and records of maintenance and repairs performed.

(d) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to *10 percent or more of the gross heat input on an annual basis*, you must submit along with your annual emissions certification an annual report. You must report the data specified in (d)(1) through (d)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is

equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.
**[Ref: §63.6650 What reports must I submit and when?}**

(2) For any NSPS emergency diesel engine the Permittee shall for each fuel delivery obtain from the fuel supplier a fuel supplier certification consisting of the name of the oil supplier, the date of delivery, the amount of fuel delivered, and a statement from the fuel supplier

(3) The Permittee shall maintain on site and make available to the Department upon request the following records:

(a) All notifications submitted to comply with 40 CFR 60, Subpart JJJJ and all documentation supporting any notification.

(b) Engine/generator and oxidation catalyst manufacturer's operations and maintenance manual.

(c) Maintenance plan and records of conducted maintenance.

(d) Documentation that the engines meet the emission standards.

(e) Copy of the results of each performance/emissions test conducted.

Reporting:

(4) The Permittee shall submit an initial notification as required in §60.7(a)(1). The notification must include the information:

(a) Name and address of the owner or operator;

(b) The address of the affected source;

(c) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(d) Emission control equipment; and

(e) Fuel used.

(5) Owners and operators of stationary SI ICE engines that are subject to performance testing must submit a copy of each performance test conducted under §60.4244 within 60 days after the test has been completed.**[Ref.: 40 CFR 60 subpart JJJJ §60.4245]**

(6) The Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:

(a) mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;

(b) accounts of the methods and assumptions used to quantify emissions;

(c) all operating data, including operating schedules and production data that were used in determinations of emissions;

(d) amounts, types, and analyses of all fuels used;

(e) any records, the maintenance of which is required by this permit or by State or federal regulations, that pertains to the operation and maintenance of continuous emissions monitors, including:

(i) all emissions data generated by such monitors;

(ii) all monitor calibration data;

(iii) information regarding the percentage of time each monitor was available for service; and

(iv) information concerning any equipment malfunctions.

(f) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:

(i) identifications and descriptions of all such equipment;
(ii) operating schedules for each item of such equipment;
(iii) accounts of any significant maintenance performed;
(iv) accounts of all malfunctions and outages; and
(v) accounts of any episodes of reduced efficiency.

(g) limitations on source operation or any work practice standards that significantly affect emissions; and

(h) other relevant information as required by the Department.

(7) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.02.19D.

(a) Certifications of emissions shall be submitted on forms obtained from the Department.

(b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.

(c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(8) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.