# Iowa Department of Natural Resources
# Title V Operating Permit

## Name of Permitted Facility: Iowa Fertilizer Company
## Facility Location: 3550 180th St., Wever, IA 52658
## Air Quality Operating Permit Number:
## Expiration Date: February 9, 2025
**Permit Renewal Application Deadline: August 8, 2024**

**EIQ Number: 92-6976**
**Facility File Number: 56-10-001**

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**Responsible Official**
**Name: Robb Aultman**
**Title: Plant Manager**
**Mailing Address: 3550 180th St., Wever, IA 52658**
**Phone #: (319) 376-4739**

**Permit Contact Person for the Facility**
**Name: Dan Walters**
**Title: Senior Health, Safety, and Environmental Manager**
**Mailing Address: 3550 180th St., Wever, IA 52658**
**Phone #: (319) 376-4704**

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This permit is issued in accordance with 567 Iowa Administrative Code Chapter 22, and is issued subject to the terms and conditions contained in this permit.

**For the Director of the Department of Natural Resources**

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Lori Hanson, Supervisor of Air Operating Permits Section Date

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# Abbreviations

acfm ..... actual cubic feet per minute
CFR..... Code of Federal Regulation
CE ..... control equipment
CEM ..... continuous emission monitor
$^{o}$F..... degrees Fahrenheit
EIQ ..... emissions inventory questionnaire
EP ..... emission point
EU..... emission unit
gr./dscf ..... grains per dry standard cubic foot
IAC ..... Iowa Administrative Code
DNR..... Iowa Department of Natural Resources
NAICS ..... North American Industry Classification System
NSPS..... new source performance standard
ppmv ..... parts per million by volume
lb./hr..... pounds per hour
lb./MMBtu ..... pounds per million British thermal units
SCC..... Source Classification Codes
scfm ..... standard cubic feet per minute
SIC..... Standard Industrial Classification
TPY..... tons per year
USEPA ..... United States Environmental Protection Agency

Pollutants
PM ..... particulate matter
$PM_{10}$ ..... particulate matter ten microns or less in diameter
$PM_{2.5}$..... particulate matter two and a half microns or less in diameter
$SO_2$ ..... sulfur dioxide
$NO_x$..... nitrogen oxides
VOC..... volatile organic compound
CO..... carbon monoxide
HAP ..... hazardous air pollutant
$CO_2$ ..... carbon dioxide
$CO_2e$ ..... carbon dioxide equivalents
$CH_4$ ..... methane
$N_2O$..... nitrous oxide

# I. Facility Description and Equipment List

Facility Name: Iowa Fertilizer Company
Permit Number: 20-TV-001

Facility Description: Nitrogenous Fertilizer Manufacturing (SIC 2873, NAICS 325311)

## Equipment List

| Emission Point Number | Emission Unit Number | Emission Unit Description | DNR Construction Permit Number |
|---|---|---|---|
| EP 01 | EU 01 | Primary Reformer | 12-A-380-P3 |
| EP 02 | EU 02 | $CO_2$ Stripper | 12-A-381-P2 |
| EP 03 | EU 03 | Urea Ammonium Nitrate (UAN) Mixing Tank | 12-A-382-P1 |
| EP 04 | EU 04 | Urea Synthesis | 12-A-383-P3 |
| EP 04A | | | 14-A-037-P1 |
| EP 05 | EU 05 | Nitric Acid Plant | 12-A-384-P3 |
| EP 06 | EU 06 | Nitric Acid Storage Tank | 12-A-385-P2 |
| EP 07A | EU 07A | Auxiliary Boiler A | 12-A-386-P3 |
| EP 07B | EU 07B | Auxiliary Boiler B | 14-A-038-P2 |
| EP 08A | EU 08A | Ammonia Flare – Front End | 12-A-387-P3 |
| | EU 08A-2 | Ammonia Flare – Front End (SSM) | |
| EP 08B | EU 08B | Ammonia Flare – Back End | 14-A-039-P2 |
| | EU 08B-2 | Ammonia Flare – Back End (SSM) | |
| EP 08C | EU 08C | Ammonia Tank Flare #1 | 14-A-040-P3 |
| | EU 08C-2 | Ammonia Tank Flare #1 (SSM) | |
| EP 08D | EU 08D | Ammonia Tank Flare #2 | 14-A-041-P3 |
| | EU 08D-2 | Ammonia Tank Flare #2 (SSM) | |
| EP 09 | EU 09 | Engine EDG 1101 | 12-A-388-P2 |
| EP 10 | EU 10 | Fire Pump | 12-A-389-P2 |
| EP 11 | EU 11 | Startup Heater | 12-A-390-P3 |
| EP 12 | EU 12 | Urea Granulator | 12-A-391-P2 |
| EP CTA | EU CTA | Cooling Tower A | 12-A-392-P3 |
| EP CTB | EU CTA | Cooling Tower B | 12-A-393-P3 |
| EP P1 | EU P-1A | Granulator Transfer | 12-A-394-P2 |
| | EU P-1B | Warehouse Transfer | |
| | EU P-1C | Reclaim Transfer | |
| EP P2 | EU P2 | Granulated Urea Truck Loading | 12-A-396-P2 |
| EP MDEA-TK | EU MDEA-TK | Methyl-diethanol Amine (MDEA) Storage Tank | 12-A-400-P1 |
| EP HR | EU HR | Product Haul Roads | 12-A-401-P2 |
| EP 13 | EU 13 | Engine EDG 3101 | 14-A-042-P1 |
| EP 14 | EU 14 | Emergency Cooling Water Pump #1 | 14-A-043-P1 |
| EP 15 | EU 15 | Emergency Cooling Water Pump #2 (Downstream) | 14-A-044-P1 |

| | | | |
|---|---|---|---|
| EP 16 | EP 16 | Engine EDG 5101 | 14-A-045-P1 |
| EP 17 | EU 17 | Emergency Generator Well #11 | 14-A-046-P1 |
| EP 18 | EU 18 | Emergency Generator Well #12 | 14-A-047-P1 |
| EP 19 | EU 19 | Emergency Generator Well #13 | 14-A-048-P1 |
| EP 20 | EU 20 | Emergency Generator Well #14 | 14-A-049-P1 |
| EP 23 | EU 23 | Emergency Generator #4 | 14-A-050-P1 |
| EP 25 | EU 25 | Emergency Generator #5 | 15-A-605-P |
| EP UF85-TK | EU UF85-TK | UF-85 Storage Tank | 14-A-051-P1 |
| EP 24 | EU 24 | Equipment Leaks | 14-A-052-P1 |
| EP TK09 | EU TK09 | Diesel Fuel Tank #1 | 14-A-053-P |
| EP TK10 | EU TK10 | Diesel Fuel Tank #2 | 14-A-060-P |
| EP TK13 | EU TK13 | Diesel Fuel Tank #3 | 14-A-061-P |
| EP TK14 | EU TK14 | Diesel Fuel Tank #4 | 14-A-062-P |
| EP TK15 | EU TK15 | Diesel Fuel Tank #5 | 14-A-063-P |
| EP TK16 | EU TK16 | Diesel Fuel Tank #6 | 14-A-064-P |
| EP TK17 | EU TK17 | Diesel Fuel Tank #7 | 14-A-065-P |
| EP TK18 | EU TK18 | Diesel Fuel Tank #8 | 14-A-066-P |
| EP TK19 | EU TK19 | Diesel Fuel Tank #9 | 14-A-067-P |
| EP TK20 | EU TK20 | Diesel Fuel Tank #10 | 14-A-068-P |
| EP TK23 | EU TK23 | Diesel Fuel Tank #11 | 14-A-069-P |
| EP TK25 | EU TK25 | Diesel Fuel Tank #12 | 15-A-606-P |
| EP 21 | EU 21 | Lime Silo | 15-A-604-P1 |
| EP TK26 | EU TK26 | Off-Road Diesel Storage Tank | 16-A-286-P |
| EP TK27 | EU TK27 | On-Road Diesel Storage Tank | 16-A-287-P |
| EP TK28 | EU TK28 | Gasoline Storage Tank | 16-A-288-P |
| EP TK95 | EU TK95 | BFW Condensate Storage Tank | 18-A-406-P |

## Insignificant Activities Equipment List

| **Insignificant Emission Unit Number** | **Insignificant Emission Unit Description** |
|---|---|
| TANK-1 | Off-Road Diesel Tank (1,000 gallons) |

# II. Plant-Wide Conditions

Facility Name: Iowa Fertilizer Company
Permit Number: 20-TV-001

Permit conditions are established in accord with 567 Iowa Administrative Code rule 22.108

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**Permit Duration**

The term of this permit is: Five (5) years.
Commencing on: February 10, 2020
Ending on: February 9, 2025

Amendments, modifications and reopenings of the permit shall be obtained in accordance with 567 Iowa Administrative Code rules 22.110 - 22.114. Permits may be suspended, terminated, or revoked as specified in 567 Iowa Administrative Code Rules 22.115.

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**Emission Limits**
*Unless specified otherwise in the Source Specific Conditions, the following limitations and supporting regulations apply to all emission points at this plant:*

Opacity (visible emissions): 40% opacity
Authority for Requirement: 567 IAC 23.3(2)"d"

Sulfur Dioxide ($SO_2$): 500 parts per million by volume
Authority for Requirement: 567 IAC 23.3(3)"e"

Particulate Matter:
No person shall cause or allow the emission of particulate matter from any source in excess of the emission standards specified in this chapter, except as provided in 567 – Chapter 24. For sources constructed, modified or reconstructed on or after July 21, 1999, the emission of particulate matter from any process shall not exceed an emission standard of 0.1 grain per dry standard cubic foot of exhaust gas, except as provided in 567 – 21.2(455B), 23.1(455B), 23.4(455B) and 567 – Chapter 24.
For sources constructed, modified or reconstructed prior to July 21, 1999, the emission of particulate matter from any process shall not exceed the amount determined from Table I, or amount specified in a permit if based on an emission standard of 0.1 grain per standard cubic foot of exhaust gas or established from standards provided in 23.1(455B) and 23.4(455B).
Authority for Requirement: 567 IAC 23.3(2)"a"

Fugitive Dust: Attainment and Unclassified Areas - A person shall take reasonable precautions to prevent particulate matter from becoming airborne in quantities sufficient to cause a nuisance as defined in Iowa Code section 657.1 when the person allows, causes or permits any materials to

be handled, transported or stored or a building, its appurtenances or a construction haul road to be used, constructed, altered, repaired or demolished, with the exception of farming operations or dust generated by ordinary travel on unpaved roads. Ordinary travel includes routine traffic and road maintenance activities such as scarifying, compacting, transporting road maintenance surfacing material, and scraping of the unpaved public road surface. (the preceding sentence is State Only) All persons, with the above exceptions, shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property on which the emissions originate. The public highway authority shall be responsible for taking corrective action in those cases where said authority has received complaints of or has actual knowledge of dust conditions which require abatement pursuant to this subrule. Reasonable precautions may include, but not be limited to, the following procedures.

1. Use, where practical, of water or chemicals for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
2. Application of suitable materials, such as but not limited to asphalt, oil, water or chemicals on unpaved roads, material stockpiles, race tracks and other surfaces which can give rise to airborne dusts.
3. Installation and use of containment or control equipment, to enclose or otherwise limit the emissions resulting from the handling and transfer of dusty materials, such as but not limited to grain, fertilizer or limestone.
4. Covering, at all times when in motion, open-bodied vehicles transporting materials likely to give rise to airborne dusts.
5. Prompt removal of earth or other material from paved streets or to which earth or other material has been transported by trucking or earth-moving equipment, erosion by water or other means.
6. Reducing the speed of vehicles traveling over on-property surfaces as necessary to minimize the generation of airborne dusts.

Authority for Requirement: 567 IAC 23.3(2)"c"

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**40 CFR 60 Subpart A Requirements**

This facility is an affected source and these *General Provisions* apply to the facility. The affected units are EU 05, EU 07A, EU 07B, EU 09, EU 10, EU 13, EU 14, EU 15, EU 16, EU 17, EU 18, EU 19, EU 20, EU 23, EU 24, and EU 25. Applicable requirements are incorporated in the Emission Point Specific conditions. See Appendix for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart A
567 IAC 23.1(2)

**40 CFR 60 Subpart Db Requirements**

Boilers EP 07A and EP 07B are subject to the New Source Performance Standards (NSPS) Subpart Db – Standards of Performance for *Industrial-Commercial-Institutional Steam Generating Units.* Applicable subpart Db requirements are incorporated into this permit. See the Appendix for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart Db
567 IAC 23.1(2)"ccc"

**40 CFR 60 Subpart Ga Requirements**
Emission unit EU 05 is subject to the New Source Performance Standards (NSPS) Subpart Ga – Standards of Performance for *Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011.* Applicable subpart Ga requirements are incorporated into this permit. See the Appendix for a link to the Standard.
Authority for Requirements: 40 CFR 60 Subpart Ga
567 IAC 23.1(2)"bbbb"

**40 CFR 60 Subpart VVa Requirements**
Emission unit EU 24 is subject to the New Source Performance Standards (NSPS) Subpart VVa – Standards of Performance for *Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.* Applicable subpart VVa requirements are incorporated into this permit. See the Appendix for a link to the Standard.
Authority for Requirements: 40 CFR 60 Subpart VVa
567 IAC 23.1(2)"nn"

**40 CFR 60 Subpart IIII Requirements**
Emergency generators EU 09, EU 10, EU 13, EU 14, EU 15, EU 16, EU 17, EU 18, EU 19, EU 20, EU 23, and EU 25 are subject to the New Source Performance Standards (NSPS) Subpart IIII – Standards of Performance for *Stationary Compression Ignition Internal Combustion Engines.* Applicable subpart IIII requirements are incorporated into this permit. See the Appendix for a link to the Standard.
Authority for Requirements: 40 CFR 60 Subpart IIII
567 IAC 23.1(2)"yyy"

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**40 CFR 63 Subpart A Requirements**
This facility is an affected source and these *General Provisions* apply to the facility. The affected units are EU 09, EU 10, EU 13, EU 14, EU 15, EU 16, EU 17, EU 18, EU 19, EU 20, EU 23, EU 25, and EU TK28. Applicable requirements are incorporated in the Emission Point Specific conditions. See Appendix for a link to the Standard.
Authority for Requirements: 40 CFR 63 Subpart A
567 IAC 23.1(4)

**40 CFR 63 Subpart ZZZZ Requirements**
Emergency generators EU 09, EU 10, EU 13, EU 14, EU 15, EU 16, EU 17, EU 18, EU 19, EU 20, EU 23, and EU 25 are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ - *Stationary Reciprocating Internal Combustion Engines.* The generators are emergency stationary reciprocating internal combustion engines (RICE). Applicable subpart ZZZZ requirements are incorporated into this permit. See the Appendix for a link to the Standard.
Authority for Requirements: 40 CFR 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**40 CFR 63 Subpart CCCCCC Requirements**

This facility is subject to National Emission Standards for Hazardous Air Pollutants for *Source Category: Gasoline Dispensing Facilities*. The affected unit is EU TK28. Applicable requirements are incorporated in the Emission Point-Specific conditions. See Appendix for a link to the Standard.

Authority for Requirement: 40 CFR 63 Subpart CCCCCC
567 IAC 23.1(4)"ec"

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# III. Emission Point-Specific Conditions

Facility Name: Iowa Fertilizer Company
Permit Number: 20-TV-001

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## Emission Point ID Number: EP 01

Associated Equipment

Associated Emission Unit ID Number: EU 01
Emissions Control Equipment ID Number: CE 01
Emissions Control Equipment Description: Selective Catalytic Reduction
Continuous Emissions Monitor ID Number: ME 01 (for $NO_x$ and flow)

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Emission Unit vented through this Emission Point: EU 01
Emission Unit Description: Primary Reformer
Raw Material/Fuel: Natural Gas
Rated Capacity: 1133.3 MMBtu/hr (128.6 tons ammonia/hr)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 11.9 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 2.72 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 11.9 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 2.72 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 11.9 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.6 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3<br>567 IAC 23.3(2)"b" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 500 ppm |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3<br>567 IAC 23.3(3)"e" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 63.0 tons/yr[(1)], 9 ppmv[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 14.35 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 6.95 tons/yr[(1)], 0.0014 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 96.3 tons/yr[(1)], 0.0194 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 95.20 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Hexane |
| Emission Limit(s): | 1.75 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 127 lb/MMBtu[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0023 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Nitrous Oxides ($N_2O$) |
| BACT Emission Limit(s): | 0.00063 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 631,639 tons/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-380-P3 |

(1) Standard is a twelve (12) month rolling total and incudes all periods of operation including periods of startup, shutdown, or malfunction (SSM).
(2) Standard is a thirty (30) day rolling average not including periods of SSM.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Primary Reformer (EU 01) shall only use natural gas and recycle gas as feedstock for the fuel gas.

B. The minimum ammonia injection into the Selective Catalytic Reduction (SCR, CE 01) shall be 10 lb/hr (hourly average), not including periods of SSM. The owner or operator shall:
   (1) Properly operate and maintain equipment to monitor the ammonia injection into the SCR (CE 01). The monitoring device(s) and any recorders shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals or per written facility specific operation and maintenance plan.
   (2) Collect and record the ammonia injection rate into the SCR (CE 01) on an hourly basis when the emission unit is operating, except for normal meter maintenance, calibration and replacement, and malfunctions

C. The following requirements are Best Available Control Technology (BACT) work practices for startup, shutdown, and malfunction operations:
   - Startup:
     Startup of the Primary Reformer (EU 01) from cold conditions begins with the introduction of natural gas fuel to the burners and continues until the primary reformer reaches its minimum safe stable load, taking approximately forty-eight (48) hours. During startup, target parameters such as oxygen content, fuel/air ratios, turbulence, and temperature are variable in the convection section of the Primary Reformer (EU 01). The startup period ends when the reformer reaches its "minimum safe stable load" which is defined as that operating condition when
     1) convection zone parameters fall within ranges recommended by the manufacturer;
     2) catalyst tube temperatures in the convection section have risen sufficiently to allow reforming reactions to take place; and
     3) the burner system has reached effective operating conditions. Good Combustion

Practices shall be used at all times during startup.

- Shutdown:
  Shutdown of the emission unit from full load requires approximately twenty-four (24) hours. Shutdown BACT work practice standards consisting of Good Combustion Practices are applicable to this emission unit and shall be used at all times until the completion of shutdown. The shutdown period begins when the reformer falls below its minimum safe stable load as defined above.

- Malfunction:
  During malfunction, the work practice standards shall be followed for the emission unit and its air pollution control equipment as stated in 567 IAC 24.1(4).

D. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

E. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions. These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
   - $CO_2$ = 1
   - $CH_4$ = 21
   - $N_2O$ = 310

   The $CO_2$ mass emissions shall be obtained from the required CEMS or mass balance and the mass emissions for methane ($CH_4$) and nitrous oxide ($N_2O$) shall be determined by the stack testing.

Authority for Requirement: DNR Construction Permit 12-A-380-P3

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 146.6
Stack Opening, (inches, dia.): 144
Exhaust Flow Rate (scfm): 278,200
Exhaust Temperature (°F): 240
Discharge Style: Unobstructed Vertical

Authority for Requirement: DNR Construction Permit 12-A-380-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when the emission unit on this emission point is at or near full capacity. If visible emissions are observed, this, would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Continuous Emissions Monitoring:**

*The following continuous monitoring systems requirements apply to this emission point and its associated emission unit(s) and control equipment:*

A. The following monitoring systems are required:

(1) $NO_x$:

The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring nitrogen oxide ($NO_x$) emissions.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

(2) $O_2$ or $CO_2$:
The owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the oxygen ($O_2$) or carbon dioxide ($CO_2$) content of the flue gases at each location where $NO_x$ emissions are monitored.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 3 (PS3) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

(3) Flowmeter:
The owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere.

B. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits (CGA) and annual relative accuracy test audit (RATA). Annual RATAs and quarterly CGAs are required to be conducted on all CEMS and flowmeters required by this permit. The results shall be reported in units of the standards.

If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

C. The CEMS required in Condition A for $NO_x$ and either $O_2$ or $CO_2$ shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

D. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:
(1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(2) The 1-hour average $NO_x$ and $CO_2$ emission rates measured by the CEMS and flow measured by the flowmeter required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.

(3) For each hour of missing emission data ($NO_x$ or $CO_2$), the owner or operator shall substitute data by:
(i) If the quarterly monitor data availability is equal to or greater than 95.0%, the

owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:

(a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(b) For a missing data period greater than 24 hours, substitute the greater of:

- The 90$^{th}$ percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
- The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(ii) If the quarterly monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:

(a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(b) For the missing data period of more than 8 hours, substitute the greater of:

- The 95$^{th}$ percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
- The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(iii) If the quarterly monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

Authority for Requirement: DNR Construction Permit 12-A-380-P3

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 02

Associated Equipment

Associated Emission Unit ID Number: EU 02
Continuous Emissions Monitor ID Number: ME 02 (for $CO_2$ flow difference)

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Emission Unit vented through this Emission Point: EU 02
Emission Unit Description: Carbon Dioxide ($CO_2$) Stripper
Raw Material/Fuel: Process Gas
Rated Capacity: 128.6 tons ammonia/hr

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 51.2 tons/yr[(1)], 0.106 lbs/ton of ammonia produced |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 9.65 tons/yr[(1)], 0.020 lbs/ton of ammonia produced |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 95.20 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

| | |
|---|---|
| Pollutant: | Methanol |
| Emission Limit(s): | 0.0165 lbs/ton[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.26 tons/ton of ammonia produced[(3)] |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 1,211,847 tons/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-381-P2 |

(1) Standard is a twelve (12) month rolling total and incudes all periods of operation including periods of startup, shutdown, or malfunction (SSM).
(2) Emission limit is 0.0165 lb of methanol per ton of ammonia produced (lb methanol/ton ammonia production).

[3] Standard is a thirty (30) day rolling average not including periods of SSM.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The owner or operator shall install and use a *"low-methanol shift catalyst"* in the low temperature shift converter (LTSC).

B. The owner or operator shall operate the plant under the following conditions:
   (1) The minimum daily water flow to the shift effluent scrubber shall be 61.0 lb/hr multiplied by the ammonia plant rate (expressed in percent)/100%.
   (2) The minimum stripping steam ratio in the process Condensate Stripper shall be 0.25 lbs of stripping steam per pound of liquid feed (daily average).

C. For each day of operation, the owner or operator shall track and record:
   (1) The daily water flow to the effluent scrubber and
   (2) The stripping steam ratio in the process Condensate Stripper.

D. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

E. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions. These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
   - $CO_2$ = 1
   - $CH_4$ = 21
   - $N_2O$ = 310

   The $CO_2$ mass emissions shall be obtained from the required CEMS and the mass emissions for methane ($CH_4$) and nitrous oxide ($N_2O$) shall be determined by stack testing.

Authority for Requirement: DNR Construction Permit 12-A-381-P2

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 202
Stack Opening, (inches, dia.): 29.25
Exhaust Flow Rate (scfm): 22,500 (See Note)
Exhaust Temperature (°F): 105
Discharge Style: Unobstructed Vertical

Note: The flowrate can be as high as 52,000 scfm when the Ammonia Plant is operating and the Urea Plant is down. This condition occurs occasionally, but is not considered representative of normal operation.

Authority for Requirement: DNR Construction Permit 12-A-381-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Continuous Emissions Monitoring:**
The following continuous monitoring systems requirements apply to this emission point and its associated emission unit(s) and control equipment:

A. The following monitoring systems are required:
(1) $CO_2$:[(1)]
The owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the carbon dioxide ($CO_2$) content of the flue gas.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 3 (PS3) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

(2) Flowmeter:[(1)]
The owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition,

the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere.

(1) The owner or operator shall continuously measure compliance by either:

- Use of a $CO_2$ Continuous Emission Monitoring System (CEMS) and flowmeter or
- Use of a flowmeter and assuming 100% of the gas stream is $CO_2$.

B. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits (CGA) and annual relative accuracy test audit (RATA). Annual RATAs and quarterly CGAs are required to be conducted on all CEMS and flowmeters required by this permit. The results shall be reported in units of the standards.

If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

C. The CEMS required in Condition A for $CO_2$ shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

D. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:

(1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(2) The 1-hour average $CO_2$ emission rates measured by the CEMS and flow measured by the flowmeter required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.

(3) For each hour of missing emission data ($CO_2$), the owner or operator shall substitute data by:

(i) If the quarterly monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:

(a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(b) For a missing data period greater than 24 hours, substitute the greater of:

- The $90^{th}$ percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or

- The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(ii) If the quarterly monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:

(a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(b) For the missing data period of more than 8 hours, substitute the greater of:

- The 95$^{th}$ percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
- The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(iii) If the quarterly monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

Authority for Requirement: DNR Construction Permit 12-A-381-P2

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 03

Associated Equipment

Associated Emission Unit ID Number: EU 03
Emissions Control Equipment ID Number: CE 03
Emissions Control Equipment Description: Acid Scrubber for Ammonia Control

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Emission Unit vented through this Emission Point: EU 03
Emission Unit Description: Urea Ammonium Nitrate (UAN) Mixing Tank
Raw Material/Fuel: UAN
Rated Capacity: 5,400 Metric Tons (5,950 tons tank capacity)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 93.2 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-382-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 408.0 ton/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-382-P1 |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

Authority for Requirement: DNR Construction Permit 12-A-382-P1

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 111.5
Stack Opening, (inches, dia.): 12
Exhaust Flow Rate (scfm): 15
Exhaust Temperature (°F): 90
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-382-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 04 and EP 04A

Associated Equipment

| Emission Point | Emission Unit | Emissions Control Equipment | Emissions Control Equipment Description | Continuous Emissions Monitor |
|---|---|---|---|---|
| EP 04 | EU 04 | CE 04 | Acid Scrubber for Ammonia Control | None |
| EP 04A | | NA | NA | |

| EP | EU | Emission Unit Description | Raw Material/Fuel | Rated Capacity | Construction Permit |
|---|---|---|---|---|---|
| EP 04 | EU 04 | Urea Synthesis | Urea | 131.4 tons/hr | 12-A-383-P3 |
| EP 04A | | | | | 14-A-037-P1 |

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from the emission points shall not exceed the levels specified below.*

Pollutant: Methane ($CH_4$)
BACT Emission Limit(s): 13.8 lb/hr[(1)]
Authority for Requirement: DNR Construction Permit 12-A-383-P3 and 14-A-037-P1

Pollutant: Carbon Dioxide ($CO_2$)
BACT Emission Limit(s): 554.5 lb/hr[(1)]
Authority for Requirement: DNR Construction Permit 12-A-383-P3 and 14-A-037-P1

Pollutant: Carbon Dioxide equivalents ($CO_2e$)
BACT Emission Limit(s): 3,698 tons/yr[(1),(2)]
Authority for Requirement: DNR Construction Permit 12-A-383-P3 and 14-A-037-P1

(1) Total emissions allowed for the Urea Synthesis (EU 04) which covers EP 04 and EP 04A.
(2) Standard is a twelve (12) month rolling total and incudes all periods of operation including periods of startup, shutdown, or malfunction (SSM)

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

B. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions from Urea Synthesis (EU 04 and EU 04A). These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
   - $CO_2 = 1$
   - $CH_4 = 21$
   - $N_2O = 310$

Authority for Requirement: DNR Construction Permit 12-A-383-P3 and 14-A-037-P1

**Emission Point Characteristics**

*The emission points shall conform to the specifications listed below.*

| EP | Stack Height (ft, from the ground) | Stack Opening (dia. inch) | Exhaust Flow Rate (scfm) | Exhaust Temperature (°F) | Discharge Style |
|---|---|---|---|---|---|
| EP 04 | 125 | 10 | 500 | 125 | Unobstructed Vertical |
| EP 04A | 155 | 40 | 400 | 165 | Unobstructed Vertical |

Authority for Requirement: DNR Construction Permit 12-A-383-P3 and 14-A-037-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 05

Associated Equipment

Associated Emission Unit ID Number: EU 05
Emissions Control Equipment ID Number: CE 05
Emissions Control Equipment Description: De-$NO_x$ and De-$N_2O$ System
Continuous Emissions Monitor ID Number: ME 05 (for $NO_x$ and flow)

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Emission Unit vented through this Emission Point: EU 05
Emission Unit Description: Nitric Acid Plant
Raw Material/Fuel: Nitric Acid
Rated Capacity: 2,100 tons/day

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 30.0 tons/yr(1), 5 ppmv(2) |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 0.50 lb/ton(3) |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3<br>40 CFR Part 60 Subpart Ga<br>567 IAC 23.1(2)"bbbb" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 39.80 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 98% reduction and 30 ppmv |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 46,842 tons/yr(1) |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 40 ppmv |
| Authority for Requirement: | DNR Construction Permit 12-A-384-P3 |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).
(2) Standard is a thirty (30) day rolling average not including periods of SSM.
(3) In accordance with 40 CFR §60.72a, the affected facility shall not discharge gases which contain $NO_x$, expressed as $NO_2$, in excess of 0.50 pounds (lbs) per ton of nitric acid produced. The standard is a thirty (30) day emission rate calculated based on thirty (30) consecutive operating days and the production expressed as 100% nitric acid. The standard applies at all times.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The following requirements are BACT requirements for the Nitric Acid Plant (EU 05) gauzes:
   (1) The owner or operator shall properly operate and maintain process meters to measure the inlet and outlet nitrous oxide ($N_2O$) concentrations on a $ppm_v$ basis. The process meter and any data recorders shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals or in written facility specific operation and maintenance plan.
   (2) The owner or operator shall collect and record the inlet and outlet nitrous oxide ($N_2O$) concentrations when the emission unit is operating, except for normal meter maintenance, calibration, replacement, and malfunctions.
   (3) The owner or operator shall record the nitrous oxide ($N_2O$) control efficiency on a daily basis (24-hr average).
   (4) The gauzes in the Nitric Acid Plant (EU 05) shall be replaced within ninety (90) days after indication there is reduced nitrous oxide ($N_2O$) efficiency ($\leq$ 98.5% reduction) and/or increased outlet nitrous oxide ($N_2O$) concentration $\geq$ 25$ppm_v$) that occurs during five (5) or more consecutive emission unit operating days (excluding SSM).
   (5) The requirement for gauze replacement is not triggered if it is determined that a decrease in nitrous oxide ($N_2O$) control efficiency and/or an increase in $N_2O$ concentration is unrelated to the gauze performance (e.g. other nitric acid plant process parameters) and appropriate corrective action is undertaken to restore plant performance. The owner or operator shall keep a log of:
      (a) The date;
      (b) The other parameter(s) that impacted nitric acid plant performance;
      (c) A detailed explanation on why performance was impacted by the other parameter(s);
      (d) The corrective action taken; and
      (e) The date normal nitric acid plant performance returned.
   (6) The owner or operator shall maintain a record of the date of installation and replacement for each Nitric Acid Plant (EU 5) gauze.

B. The minimum ammonia ($NH_3$) injection rate into the control equipment (CE 05) shall be

28 lb/hr (hourly average) and the minimum methane ($CH_4$) injection rate into the control equipment (CE 05) shall be 3 scf/min (hourly average). The owner or operator shall:

(1) Properly operate and maintain equipment to monitor the ammonia and methane injection rates into the control equipment (CE 05). The monitoring device(s) and any recorders shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals or per written facility specific operation and maintenance plan.

(2) Collect and record the ammonia ($NH_3$) injection rate to the control equipment (CE 05) on an hourly basis when the emission unit is operating, except for normal meter maintenance, calibration and replacement, and malfunctions.

(3) Collect and record the methane ($CH_4$) injection rate to the control equipment (CE 05) on an hourly basis when the emission unit is operating, except for normal meter maintenance, calibration and replacement, and malfunctions.

C. In accordance with 40 CFR §60.75a(a), the owner or operator shall calculate the thirty (30) operating day rolling arithmetic average emissions rate in units of the applicable emissions standard (lb $NO_x$/ton 100% acid produced) at the end of each operating day using all of the quality assured hourly average CEMS data for the previous thirty (30) operating days.

D. In accordance with 40 CFR §60.75a(b), the owner or operator shall calculate the thirty (30) operating day average emissions rate according to the following equation:

$$E_{30} = \frac{\left[k\left(\frac{1}{n}\right)\sum_{i=1}^{n} C_i\, Q_i\right]}{P_i}$$

Where: $E_{30}$ = thirty (30) operating day average emissions rate of $NO_x$, lb $NO_x$/ton of 100% $HNO_3$;
$C_i$ = concentration of $NO_x$ for hour i, $ppm_v$;
$Q_i$ = volumetric flow rate of effluent gas for hour i, where $C_i$ and $Q_i$ are on the same basis (either wet or dry), scf/hr;
$P_i$ = total acid produced during production hour i, tons 100% $HNO_3$;
k = conversion factor, $1.194 \times 10^{-7}$ for $NO_x$; and
n = number of operating hours in the thirty (30) operating day period, i.e., n is between 30 and 720.

E. The owner or operator shall:

(1) In accordance with 40 CFR §60.76a(a), keep records for and results of the performance evaluations of the continuous emissions monitoring systems (CEMS).

(2) In accordance with 40 CFR §60.76a(b), maintain records of the following information for each thirty (30) operating day period:
   (a) Hours of operation.
   (b) Production rate of nitric acid, expressed as 100% nitric acid.
   (c) Thirty (30) day operating day average $NO_x$ emissions rate values.

(3) In accordance with 40 CFR §60.76a(c), maintain records of the following time periods

(a) Times when the facility is not in compliance with the emissions standards.
(b) Times when the pollutant concentration exceeded full span of the $NO_x$ monitoring equipment.
(c) Times when the volumetric flowrate exceeded the high value of the volumetric flow rate monitoring equipment.

(4) In accordance with 40 CFR §60.76a(d), maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.

(5) In accordance with 40 CFR §60.76a(e), maintain records of any modifications to CEMS which could affect the ability of the CEMS to comply with applicable performance specifications.

(6) In accordance with 40 CFR §60.76a(f), maintain records of the following information for each malfunction:
(a) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.
(b) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR §60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

F. The following requirements are BACT work practices for startup, shutdown, and malfunction operations:

- <u>Startup:</u>
  Startup of the Nitric Acid Plant (EU 05) from cold conditions begins with the introduction of liquid ammonia feed into the unit for nitric acid production and $N_2O$ & $NO_x$ reduction in the control equipment (CE 05). The startup procedure takes approximately three (3) days. During plant startup, several individual processes and equipment begin operation including cooling water flow in the ammonia evaporator, steam flow into the ammonia preheater, air compressor, a series of tailgas heaters and condensors, an ammonia burner, a tailgas turbine, an absorption tower, and the control system.

  Ammonia oxidation in the ammonia burner does not commence until the temperature in the burner reaches 1,500 °F. The startup period ends when the ammonia burner reaches the required temperature, stable production of nitric acid is occurring in the absorption tower, and the control equipment (CE 05) reaches an operating temperature of 800°F. Startup BACT work practice standards shall be used at all times and will consist of Good Combustion Practices where applicable and operation of the control equipment (CE 05). The control equipment (CE 05) shall begin operation and ammonia and methane shall be injected for $NO_x$ and $N_2O$ reduction when the control equipment (CE 05) exit temperature is between 500°F and 750°F. The startup of the control equipment (CE 05) shall be considered complete when ammonia and methane flows are stable and the control equipment (CE 05) exit temperature is above 760°F.

- Shutdown:
  Shutdown of the Nitric Acid Plant (EU 05) from full load requires approximately two (2) days. Shutdown BACT work practice standards consisting of Good Combustion Practices where applicable and shall be used at all times until the completion of shutdown. The shutdown period begins when operating temperatures in the ammonia burner fall below 890°C and nitric acid production ceases. The control equipment (CE 05) and ammonia injection will be discontinued when temperatures in the control equipment (CE 05) fall below 600°F. Methane ($CH_4$) injection will be discontinued during the shutdown period once the temperature of the control equipment (CE 05) drops below 600°F.

- Malfunction:
  During malfunction, the work practice standards shall be followed for the emission unit and its air pollution control equipment as stated in 567 IAC 24.1(4).

G. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

H. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions. These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
   - $CO_2 = 1$
   - $CH_4 = 21$
   - $N_2O = 310$

   The carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) mass emissions shall be determined from the previously required stack testing.

Authority for Requirement: DNR Construction Permit 12-A-384-P3

**NSPS and NESHAP Applicability:**

This emission unit is subject to Subparts A (*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19) and Ga (*Standards of Performance for Nitric Acid Plants for Which Construction,*

*Reconstruction, or Modification Commenced After October 14, 2011*; 40 CFR §60.70a – 40 CFR §60.77a) of the New Source Performance Standards (NSPS).

Authority for Requirement: DNR Construction Permit 12-A-384-P3
40 CFR Part 60 Subpart Ga
567 IAC 23.1(2)"bbbb"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 174
Stack Opening, (inches, dia.): 79.25
Exhaust Flow Rate (scfm): 148,000
Exhaust Temperature (°F): 295
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-384-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Continuous Emissions Monitoring:**
*The following continuous emission monitoring requirements apply to this emission point and its associated emission unit(s) and control equipment:*

A. The following monitoring systems are required:
- *$NO_x$:*
  Per 40 CFR 60.73a, the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring nitrogen oxide ($NO_x$) emissions.

  The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

  This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

- *Flowmeter:*
  Per 40 CFR 60.73a, the owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere.

B. 40 CFR 60 Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits (CGA) and annual relative accuracy test audit (RATA). Annual RATAs and quarterly CGAs are required to be conducted on all CEMS and flowmeters required by this permit. The results shall be reported in units of the standards.

   If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

C. The CEMS required in Condition A for $NO_x$ shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

D. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:

   (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
   (2) The 1-hour average $NO_x$ emission rates measured by the CEMS and flow measured by the flowmeter required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.
   (3) For each hour of missing emission data ($NO_x$), the owner or operator shall substitute data by:
      (i) If the quarterly monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
         (a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
         (b) For a missing data period greater than 24 hours, substitute the greater of:
            - The $90^{th}$ percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
            - The average of the hourly concentrations recorded by a pollutant

concentration monitor for the hour before and the hour after the missing data period.

(ii) If the quarterly monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:

(a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(b) For the missing data period of more than 8 hours, substitute the greater of:

- The 95$^{th}$ percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
- The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

(iii) If the quarterly monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

Authority for Requirement: DNR Construction Permit 12-A-384-P3

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 06

Associated Equipment

Associated Emission Unit ID Number: EU 06
Emissions Control Equipment ID Number: CE 06
Emissions Control Equipment Description: Acid/Water Vent Lock

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Emission Unit vented through this Emission Point: EU 06
Emission Unit Description: Nitric Acid Storage Tank
Raw Material/Fuel: Nitric Acid
Rated Capacity: 1,935,773 gallons

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.72 tons/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-385-P2 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 0.16 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-385-P2 |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
B. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355 and 15-142 prior to making the proposed construction changes. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the department.

**Reporting and Recordkeeping**
*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For the first twelve (12) months of operation, determine the total amount of $NO_x$ emitted from this emission point (EP 06) for each month of operation.
B. After the first twelve (12) months of operation, determine the cumulative amount of $NO_x$ emitted from this emission point (EP 06) on a rolling-12-month basis for each month of operation.

Authority for Requirement: DNR Construction Permit 12-A-385-P2

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 67
Stack Opening, (inches, dia.): 36
Exhaust Flow Rate (scfm): Displacement
Exhaust Temperature (°F): 105
Discharge Style: Obstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-385-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 07A and EP 07B

Associated Equipment

Associated Emission Unit ID Numbers: EU 07A and EU 07B
Emissions Control Equipment ID Numbers: CE 07ALNB/07AFGR, CE 07BLNB/07BFGR
Emissions Control Equipment Descriptions: Low $NO_x$ Burners and Flue Gas Recirculation
Continuous Emissions Monitor ID Numbers: ME 07A and ME 07B (for $NO_x$ and flow)

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Emission Units vented through these Emission Points: EU 07A and EU 07B
Emission Unit Description: Auxiliary Boiler A and Auxiliary Boiler B
Raw Material/Fuel: Natural Gas
Rated Capacity: 305.7 MMBtu/hr per boiler

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 1.22 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.73 lb/hr |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 1.22 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.73 lb/hr |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 1.22 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 20.35 tons/yr[(1)], 0.040 lb/MMBtu[(2)] |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 0.20 lb/MMBtu[(3),(4),(5)] |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2<br>40 CFR 60 Subpart Db<br>567 IAC 23.1(2)"ccc" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 12.23 lb/hr |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.71 tons/yr[(1)], 0.0014 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 4.38 tons/yr[(1)], 0.0086 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 12.0 lb/hr |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Hexane |
| Emission Limit(s): | 0.44 lb/hr |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 127 lb/MMBtu[(2)] |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0023 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.00063 lb/MMBtu |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 64,745 tons/yr[(1)] |
| Authority for Requirements: | DNR Construction Permits 12-A-386-P3 and 14-A-038-P2 |

(1) The emission limit is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).
(2) Standard is a thirty (30) day rolling average not including periods of SSM.
(3) 0.20 lb/MMBTU = 86 ng/J. $NO_x$ (expressed as $NO_2$) is established per 40 CFR 60.44b(l)(1).
(4) Per 40 CFR §60.44b(h), this emission limit applies at all times including periods of SSM.
(5) Per 40 CFR §60.44b(i), compliance with this emission limit is determined on a thirty (30) day rolling average basis.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. Auxiliary Boilers A and B (EU 07A and EU 07B) shall only fire on natural gas.

B. The natural gas consumption for Auxiliary Boiler A and B (EU 07A and EU 07B) each shall not exceed 997.7 million cubic feet of natural gas per year (MMCF/yr). The owner or operator shall track the following:
   (1) The amount of natural gas combusted (in cubic feet/month) in Auxiliary Boiler A and B (EU 07A and EU 07B) for each month of operation.
   (2) The twelve (12) month rolling total amount of natural gas combusted (in cubic feet/month) in Auxiliary Boiler A and B (EU 07A and EU 07B) for each month of operation.

C. In accordance with 40 CFR §60.49b(d)(1), the owner or operator shall record and maintain records of the amount of natural gas combusted in Auxiliary Boiler A and B (EU 07A and EU 07B) during each day and calculate the annual capacity factor for the reporting period. The annual capacity factor is determined on a twelve (12) month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

D. In accordance with 40 CFR §60.49b(g), the owner or operator shall maintain records of the following information for each steam generating unit operating day for Auxiliary Boiler A and B (EU 07A and EU 07B):
   (1) Calendar date;
   (2) The average hourly $NO_x$ emission rates (in ng/J or lb/MMBTU heat input and expressed as $NO_2$) measured or predicted;
   (3) The thirty (30) day average $NO_x$ emission rates (ng/J or lb/MMBTU heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding thirty (30) steam generating unit operating days.
   (4) Identification of the steam generating unit operating days when the calculated thirty (30) day average $NO_x$ emission rates are in excess of the $NO_x$ emission standards under 40 CFR §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;
(6) Identification of the times when emissions data have been excluded from the calculation of average emission rates and the reasons for excluding data;
(7) Identification of "F" factor used for calculations, method of determination, and the type of fuel combusted;
(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;
(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and
(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR Appendix F, Procedure 1.

E. In accordance with 40 CFR §60.49b(r), the owner or operator that elects to use the fuel based compliance alternative in 40 CFR §60.42b ($SO_2$ limits) shall either:
(1) Obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the gaseous fuel meets the definition of natural gas as defined in 40 CFR §60.41b and the applicable sulfur limit. Reports shall be submitted to the Administrator certifying that only natural gas that is known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period; or
(2) Develop and submit a site-specific fuel analysis plan to the Administrator for review and approval no later than sixty (60) days before the date the owner or operator intends to demonstrate compliance. Each fuel analysis plan shall include a minimum initial requirement of weekly testing and each analysis report shall contain the following minimum information:
(a) The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input;
(b) The method used to determine the potential sulfur emissions rate of each constituent of the mixture. For natural gas a fuel receipt or tariff sheet is acceptable;
(c) The ratio of different fuels in the mixture; and
(d) The owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling.

F. The following requirements are Best Available Control Technology (BACT) work practices for startup, shutdown, and malfunction operations:
- <u>Startup:</u>
Startup of Auxiliary Boilers A and B (EU 07A and EU 07B) from cold conditions begins with the introduction of natural gas fuel to the low $NO_x$ burners (LNB) and continues until the boiler reaches its minimum safe stable load, taking approximately twenty-four (24) hours. During startup, target parameters such as oxygen content, fuel/air ratios, turbulence, and temperature are variable in the combustion section of the boiler. The startup period ends when the boiler reaches its "minimum safe stable load" which is defined as that operating condition when:

(1) combustion zone parameters listed above fall within ranges recommended by the manufacturer;
(2) stable steam production is occurring and
(3) the LNB system has reached effective operating conditions. Good Combustion Practices shall be used at all times during startup.

- Shutdown:
  Shutdown of the emission unit from full load requires approximately twelve (12) hours. Shutdown BACT work practice standards consisting of Good Combustion Practices are applicable to this emission unit and shall be used at all times until the completion of shutdown. The shutdown period begins when the boiler falls below its minimum safe stable load as defined above.

- Malfunction:
  During malfunction, the work practice standards shall be followed for the emission unit and its air pollution control equipment as stated in 567 IAC 24.1(4).

G. For GHG emissions, the owner or operator shall:
(1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
(2) Implement the practices contained within the *Work Practices Manual*.
(3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

H. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions. These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
- $CO_2 = 1$
- $CH_4 = 21$
- $N_2O = 310$

The $CO_2$ mass emissions shall be obtained from the required CEMS or mass balance and the mass emissions for methane ($CH_4$) and nitrous oxide ($N_2O$) shall be determined by the stack testing.

Authority for Requirements: DNR Construction Permits 12-A-386-P3 and 14-A-038-P2

**NESHAP and NSPS Applicability**

These emission units are subject to Subparts A (*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19) and Db (*Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*; 40 CFR §60.40b – 40 CFR §60.49b) of the New Source Performance Standards.

Authority for Requirements: DNR Construction Permits 12-A-386-P3 and 14-A-038-P2
40 CFR 60 Subpart Db
567 IAC 23.1(2)"ccc"

**Emission Point Characteristics**

*Each emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 85
Stack Opening, (inches, dia.): 70
Exhaust Flow Rate (scfm): 62,300
Exhaust Temperature (°F): 300
Discharge Style: Unobstructed Vertical
Authority for Requirements: DNR Construction Permits 12-A-386-P3 and 14-A-038-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when each emission unit on each emission point is at or near full capacity. If visible emissions are observed, this, would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Continuous Emissions Monitoring:**
*The following continuous emission monitoring requirements apply to each emission point and its associated emission unit(s) and control equipment:*

A. The following monitoring systems are required:
   (1) $NO_x$:
   In accordance with 40 CFR §60.48b(b), the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring nitrogen oxide ($NO_x$) emissions.

   The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

   This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

   (2) $O_2$ or $CO_2$:
   In accordance with 40 CFR §60.48b(b), the owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the oxygen ($O_2$) or carbon dioxide ($CO_2$) content of the flue gases at each location where $NO_x$ emissions are monitored.

   The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 3 (PS3) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply.

   This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

   (3) Flowmeter:
   The owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere.

B. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits (CGA) and annual relative accuracy test audit (RATA). Annual RATAs and quarterly CGAs are required to be conducted on all CEMS and flowmeters required by this permit. The results shall be reported in units of the standards.

If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

C. The CEMS required in Condition A. for $NO_x$ and either $O_2$ or $CO_2$ shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

D. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:
   (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
   (2) The 1-hour average $NO_x$ and $CO_2$ emission rates measured by the CEMS and flow measured by the flowmeter required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.
   (3) For each hour of missing emission data ($NO_x$ or $CO_2$), the owner or operator shall substitute data by:
      (i) If the quarterly monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
         (a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
         (b) For a missing data period greater than 24 hours, substitute the greater of:
            - The $90^{th}$ percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
            - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      (ii) If the quarterly monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
         (a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
         (b) For the missing data period of more than 8 hours, substitute the greater of:
            - The $95^{th}$ percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
            - The average of the hourly concentrations recorded by a pollutant

concentration monitor for the hour before and the hour after the missing data period.

(iii) If the quarterly monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

Authority for Requirements: DNR Construction Permits 12-A-386-P3 and 14-A-038-P2

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 08A

Associated Equipment

Associated Emission Unit ID Number: EU 08A, EU 08A-2

| EP | EU | Emission Unit Description | Raw Material | Rated Capacity |
|---|---|---|---|---|
| EP 08A | EU 08A | Ammonia Flare – Front End | Natural Gas, Propane, Sweep Gas, Process Gas, Assist Gas | Four (4) pilot burners rated at 121.5 scf/hr each |
| | EU 08A-2 | Ammonia Flare – Front End (SSM) | Process Gas, Unreacted Natural Gas, Assist Gas | 1,068,522 MMBtu/yr Process Gas, 93,349 MMBtu/yr Unreacted Natural Gas, 87,384 MMBtu/yr Assist Gas |

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

Pollutant: Opacity
BACT Emission Limit(s): No Visible Emissions (NVE)(1)
Authority for Requirement: DNR Construction Permit 12-A-387-P3

Pollutant: Particulate Matter ($PM_{2.5}$)
Emission Limit(s): 0.11 lb/hr(2)
Authority for Requirement: DNR Construction Permit 12-A-387-P3

Pollutant: Particulate Matter ($PM_{10}$)
Emission Limit(s): 0.11 lb/hr(2)
Authority for Requirement: DNR Construction Permit 12-A-387-P3

Pollutant: Particulate Matter (PM) – State
Emission Limit(s): 0.1 gr/dscf
Authority for Requirement: DNR Construction Permit 12-A-387-P3
567 IAC 23.3(2)"a"

Pollutant: Sulfur Dioxide ($SO_2$)
Emission Limit(s): 500 ppm
Authority for Requirement: DNR Construction Permit 12-A-387-P3
567 IAC 23.3(3)"e"

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 1.56 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-387-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 1.22 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-387-P3 |

(1) Applies at all times except as allowed by Operational Limits & Reporting and Recordkeeping Requirement D.
(2) The emission limit applies only to the operation of the pilot burners.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Front End Ammonia Flare (EU 08A) shall be fueled with natural gas or propane in order to maintain the pilot.

B. The Front End Ammonia Flare (EU 08A) may combust sweep gas (natural gas or nitrogen) to provide the required minimum flow through flare during idling to prevent air back-flowing into the flare stack and flare header and creating a potentially explosive mixture.

C. The Front End Ammonia Flare (EU 08A) is authorized to flare process off gases.

D. For purposes of the BACT work practice on the Ammonia Flare (EU 08A), it shall:
   (1) Be designed for and operated with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.
   (2) Be operated with a pilot flame present at all times. The owner or operator shall:
      (a) Use a thermocouple or any other equivalent device to detect the presence of a pilot flame. The owner or operator shall:
         (i) Properly maintain equipment used to continuously monitor the pilot flame.
         (ii) Record when the monitoring equipment is down for service or malfunctioning. The recordkeeping shall include:
            - The length of time the monitoring equipment was malfunctioning or down for service and
            - The problem(s) with the monitoring equipment.
         (iii) Use a visual observation to verify the presence of a pilot flame if the monitoring equipment is malfunctioning or down for service. The owner or operator shall keep a record of the visual observations and the records shall at a minimum contain the following information:
            - The date and time the visual observations began,
            - The reason for the visual observations,

- The frequency of visual observations, and
- The date and time the visual observations ended.

(b) Record any periods of time during which there was no pilot flame.

(3) Be designed to ensure smokeless operation.

I. The owner or operator shall maintain records of any maintenance work performed on the Front End Ammonia Flare (EU 08A).

J. For purposes of a work practice BACT on the Front End Ammonia Flare (EU 08A), the owner or operator shall
   (1) Keep a copy of the required *"Flare Minimization Plan"* on-site.
   (2) Implement the practices contained within the *Flare Minimization Plan*.
   (3) Revise the *Flare Minimization Plan* and submit the revisions to the Department as necessary to document any proposed changes. The revised *Flare Minimization Plan* shall be implemented upon the Department's approval of the proposed changes.

K. The owner or operator shall record and maintain the following monthly records:
   (1) The number of hours that the flare was in operation,
   (2) The emissions from the flare for each pollutant for that month,
   (3) The rolling twelve (12) month total of the number of hours that the flare was in operation, and
   (4) The rolling twelve (12) month total emissions for each pollutant for each month of operation.

L. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

Authority for Requirement: DNR Construction Permit 12-A-387-P3

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 200
Stack Opening, (inches, dia.): 96
Exhaust Flow Rate (scfm): 175
Exhaust Temperature (°F): 2,500
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-387-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 08B

Associated Equipment

Associated Emission Unit ID Number: EU 08B, EU 08B-2

| EP | EU | Emission Unit Description | Raw Material | Rated Capacity |
|---|---|---|---|---|
| EP 08B | EU 08B | Ammonia Flare – Back End | Natural Gas, Propane, Sweep Gas, Process Gas, Assist Gas | Three (3) pilot burners rated at 121.5 scf/hr each |
| | EU 08B-2 | Ammonia Flare – Back End (SSM) | Process Gas, Assist Gas, Ammonia Gas | 1,015,562 MMBtu/yr Process Gas, 135,176 MMBtu/yr Assist Gas, 29,600 lb/yr Ammonia Gas |

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

Pollutant: Opacity
BACT Emission Limit(s): No Visible Emissions (NVE)(1)
Authority for Requirement: DNR Construction Permit 14-A-039-P2

Pollutant: Particulate Matter ($PM_{2.5}$)
Emission Limit(s): 0.05 lb/hr(2)
Authority for Requirement: DNR Construction Permit 14-A-039-P2

Pollutant: Particulate Matter ($PM_{10}$)
Emission Limit(s): 0.05 lb/hr(2)
Authority for Requirement: DNR Construction Permit 14-A-039-P2

Pollutant: Particulate Matter (PM) – State
Emission Limit(s): 0.1 gr/dscf
Authority for Requirement: DNR Construction Permit 14-A-039-P2
567 IAC 23.3(2)"a"

Pollutant: Sulfur Dioxide ($SO_2$)
Emission Limit(s): 500 ppm
Authority for Requirement: DNR Construction Permit 14-A-039-P2
567 IAC 23.3(3)"e"

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 0.75 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 14-A-039-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 0.51 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 14-A-039-P2 |

(1) Applies at all times except as allowed by Operational Limits & Reporting and Recordkeeping Requirement D.
(2) The emission limit applies only to the operation of the pilot burners.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Back End Ammonia Flare (EU 08B) shall be fueled with natural gas or propane in order to maintain the pilot.

B. The Back End Ammonia Flare (EU 08B) may combust sweep gas (natural gas or nitrogen) to provide the required minimum flow through flare during idling to prevent air back-flowing into the flare stack and flare header and creating a potentially explosive mixture and/or assist gas (natural gas) as enrichment fuel, as needed.

C. The Back End Ammonia Flare (EU 08B) is authorized to flare process off gases.

D. For purposes of the BACT work practice on the Ammonia Flare (EU 08B), it shall:
   (1) Be designed for and operated with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.
   (2) Be operated with a pilot flame present at all times. The owner or operator shall:
      (a) Use a thermocouple or any other equivalent device to detect the presence of a pilot flame. The owner or operator shall:
         (i) Properly maintain equipment used to continuously monitor the pilot flame.
         (ii) Record when the monitoring equipment is down for service or malfunctioning. The recordkeeping shall include:
            - The length of time the monitoring equipment was malfunctioning or down for service and
            - The problem(s) with the monitoring equipment.
         (iii) Use a visual observation to verify the presence of a pilot flame if the monitoring equipment is malfunctioning or down for service. The owner or operator shall keep a record of the visual observations and the records shall at a minimum contain the following information:
            - The date and time the visual observations began,
            - The reason for the visual observations,

- The frequency of visual observations, and
- The date and time the visual observations ended.

(b) Record any periods of time during which there was no pilot flame.

(3) Be designed to ensure smokeless operation.

E. The owner or operator shall maintain records of any maintenance work performed on the Back End Ammonia Flare (EU 08B).

F. For purposes of a work practice BACT on the Back End Ammonia Flare (EU 08B), the owner or operator shall
   (1) Keep a copy of the required *"Flare Minimization Plan"* on-site.
   (2) Implement the practices contained within the *Flare Minimization Plan*.
   (3) Revise the *Flare Minimization Plan* and submit the revisions to the Department as necessary to document any proposed changes. The revised *Flare Minimization Plan* shall be implemented upon the Department's approval of the proposed changes.

G. The owner or operator shall record and maintain the following monthly records:
   (1) The number of hours that the flare was in operation,
   (2) The emissions from the flare for each pollutant for that month,
   (3) The rolling twelve (12) month total of the number of hours that the flare was in operation, and
   (4) The rolling twelve (12) month total emissions for each pollutant for each month of operation.

H. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

Authority for Requirement: DNR Construction Permit 14-A-039-P2

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 200
Stack Opening, (inches, dia.): 50
Exhaust Flow Rate (scfm): 90
Exhaust Temperature (°F): 2,500
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 14-A-039-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Numbers: EP 08C and EP 08D

Associated Equipment

Associated Emission Unit ID Numbers: EU 08C, EU 08C-2, EU 08D, and EU 08D-2

| EP | EU | Emission Unit Description | Raw Material | Rated Capacity |
|---|---|---|---|---|
| EP 08C | EU 08C | Ammonia Tank Flare #1 | Natural Gas, Propane, Sweep Gas, Process Gas, Assist Gas | Two (2) pilot burners rated at 62 scf/hr each |
| | EU 08C-2 | Ammonia Tank Flare #1 (SSM) | Ammonia Gas | 222,720 lb/yr Ammonia Gas |
| EP 08D | EU 08D | Ammonia Tank Flare #2 | Natural Gas, Propane, Sweep Gas, Process Gas, Assist Gas | Two (2) pilot burners rated at 62 scf/hr each |
| | EU 08D-2 | Ammonia Tank Flare #2 (SSM) | Ammonia Gas | 222,720 lb/yr Ammonia Gas |

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

Pollutant: Opacity
BACT Emission Limit(s): No Visible Emissions (NVE)(1)
Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3

Pollutant: Particulate Matter ($PM_{2.5}$)
Emission Limit(s): 0.005 lb/hr(2)
Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3

Pollutant: Particulate Matter ($PM_{10}$)
Emission Limit(s): 0.005 lb/hr(2)
Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3

Pollutant: Particulate Matter (PM) – State
Emission Limit(s): 0.1 gr/dscf
Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3
567 IAC 23.3(2)"a"

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 500 ppm |
| Authority for Requirement: | DNR Construction Permits 14-A-040-P3 and 14-A-041-P3<br>567 IAC 23.3(3)"e" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| Emission Limit(s): | 0.56 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permits 14-A-040-P3 and 14-A-041-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 0.05 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permits 14-A-040-P3 and 14-A-041-P3 |

(1) Applies at all times except as allowed by Operational Limits & Reporting and Recordkeeping Requirement D.
(2) The emission limit applies only to the operation of the pilot burners.

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Ammonia Tank Flares (EU 08C and EU 08D) shall be fueled with natural gas or propane in order to maintain the pilot.

B. The Ammonia Tank Flares (EU 08C and EU 08D) may utilize sweep gas (nitrogen) in order to provide the required minimum flow through the flares during idling to prevent air back-flowing into the flare stacks and flare headers and creating a potentially explosive mixture.

C. The Ammonia Tank Flares (EU 08C and EU 08D) are authorized to flare ammonia.

D. For purposes of the BACT work practice on the Ammonia Flares (EU 08C and EU 08D), they shall:
   (1) Be designed for and operated with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.
   (2) Be operated with a pilot flame present at all times. The owner or operator shall:
      (a) Use a thermocouple or any other equivalent device to detect the presence of a pilot flame. The owner or operator shall:
         (i) Properly maintain equipment used to continuously monitor the pilot flame.
         (ii) Record when the monitoring equipment is down for service or malfunctioning. The recordkeeping shall include:
            - The length of time the monitoring equipment was malfunctioning or down for service and
            - The problem(s) with the monitoring equipment.

(iii) Use a visual observation to verify the presence of a pilot flame if the monitoring equipment is malfunctioning or down for service. The owner or operator shall keep a record of the visual observations and the records shall at a minimum contain the following information:

- The date and time the visual observations began,
- The reason for the visual observations,
- The frequency of visual observations, and
- The date and time the visual observations ended.

(b) Record any periods of time during which there was no pilot flame.

(3) Be designed to ensure smokeless operation.

E. The owner or operator shall maintain records of any maintenance work performed on the Ammonia Tank Flares (EU 08C and EU 08D).

F. For purposes of a work practice BACT on the Ammonia Tank Flares (EU 08C and EU 08D), the owner or operator shall
(1) Keep a copy of the required *"Flare Minimization Plan"* on-site.
(2) Implement the practices contained within the *Flare Minimization Plan*.
(3) Revise the *Flare Minimization Plan* and submit the revisions to the Department as necessary to document any proposed changes. The revised *Flare Minimization Plan* shall be implemented upon the Department's approval of the proposed changes.

G. The owner or operator shall record and maintain the following monthly records:
(1) The number of hours that the flares were in operation,
(2) The emissions from the flares for each pollutant for that month,
(3) The rolling twelve (12) month total of the number of hours that the flares were in operation, and
(4) The rolling twelve (12) month total emissions for each pollutant for each month of operation.

H. For GHG emissions, the owner or operator shall:
(1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
(2) Implement the practices contained within the *Work Practices Manual*.
(3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3

**Emission Point Characteristics**

*The emission points shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 166
Stack Opening, (inches, dia.): 10
Exhaust Flow Rate (scfm): 40
Exhaust Temperature (°F): 2,500
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permits 14-A-040-P3 and 14-A-041-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 09

Associated Equipment

Associated Emission Unit ID Number: EU 09

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Emission Unit vented through this Emission Point: EU 09
Emission Unit Description: Engine EDG 1101
Raw Material/Fuel: Diesel
Rated Capacity: 5,647 bhp (274.6 gal/hr; 4,000 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.44 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 1.76 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.44 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 1.76 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.44 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 13.2 tons/yr[3], 6.0 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 6.4 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.88 tons/yr[3], 0.4 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 7.72 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 30.9 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

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|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 1,643 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

(2) Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:
- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

(3) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

(5) 4.5 grams/bhp-hr = 6.0 grams/kW-hr.

(6) 4.8 grams/bhp-hr = 6.4 grams/kW-hr.

(7) 0.3 grams/bhp-hr = 0.4 grams/kW-hr.

(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

(9) 1.16 lb/bhp-hr = 1.55 lb/kW-hr.

(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR 98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of October 26, 2012 which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
   i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use of the engines in emergency situations provided that the annual operating hours limit

established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:

i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and

ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack

locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping:**
*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 12-A-388-P2

**NESHAP and NSPS Applicability**
This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). This engine is an emergency stationary internal combustion engine that is not a fire pump engine.

This engine is subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 12-A-388-P2
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 28
Stack Opening, (inches, dia.): 25
Exhaust Flow Rate (scfm): 12,100
Exhaust Temperature (°F): 885
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-388-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 10

Associated Equipment

Associated Emission Unit ID Number: EU 10

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Emission Unit vented through this Emission Point: EU 10
Emission Unit Description: Fire Pump
Raw Material/Fuel: Diesel
Rated Capacity: 460 bhp (25 gal/hr; 343 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.04 tons/yr(2), 0.20 g/kW-hr(3) |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.15 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.04 tons/yr(2), 0.20 g/kW-hr(3) |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.15 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.04 tons/yr(2), 0.20 g/kW-hr(3) |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr(3) |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.71 tons/yr[(2)], 3.75 g/kW-hr[(4)] |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[(5)] |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.05 tons/yr[(2)], 0.25 g/kW-hr[(6)] |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.70 tons/yr[(2)], 3.5 g/kW-hr[(7)] |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[(7)] |
| Authority for Requirement: | 40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 2.65 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[(8)] |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-389-P2 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 134 tons/yr[(2),(9)] |
| Authority for Requirement: | DNR Construction Permit 12-A-388-P2 |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.
(2) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.
(3) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.
(4) 2.8 grams/bhp-hr = 3.75 grams/kW-hr.
(5) 3.0 grams/bhp-hr = 4.0 grams/kW-hr.
(6) 0.2 grams/bhp-hr = 0.25 grams/kW-hr.
(7) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.
(8) 1.16 lb/bhp-hr = 1.55lb/kW-hr.
(9) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR 98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of October 26, 2012 which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
   i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.
   ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.
D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by

volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.
F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.
G. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 60.4211(g).
H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer's emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.
I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department's review and approval or the completion of construction of Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department's approval of the proposed changes.
J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping:**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation

for this emission unit on a rolling twelve (12) month basis for each month of operation.

C. The owner or operator of the engine shall comply with the requirements of Operating Limit condition D listed above by one of the following methods:
   i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
   ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
   iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
   i. the number of hours that the engine operated for maintenance checks and readiness testing;
   ii. the number of hours that the engine operated for allowed non-emergency operations;
   iii. the total number of hours that the engine operated; and
   iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
   i. the number of hours that the engine operated for maintenance checks and readiness testing; and
   ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 12-A-389-P2

**NESHAP and NSPS Applicability**

This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS).

This engine is subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 12-A-389-P2
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 10
Stack Opening, (inches, dia.): 14
Exhaust Flow Rate (scfm): 600
Exhaust Temperature (°F): 900
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-389-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 11

Associated Equipment

Associated Emission Unit ID Number: EU 11

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Emission Unit vented through this Emission Point: EU 11
Emission Unit Description: Startup Heater
Raw Material/Fuel: Natural Gas
Rated Capacity: 108.6 MMBtu/hr (Nine (9) burners rated @ 11.98 MMBtu/hr each & nine (9) pilots rated @ 0.083 MMBtu/hr each)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.06 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.26 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.06 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.26 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.06 tons/yr[(1)], 0.0024 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.6 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3<br>567 IAC 23.3(2)"b" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 500 ppm |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3<br>567 IAC 23.3(3)"e" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 3.0 tons/yr[(1)], 0.119 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.03 tons/yr[(1)], 0.0014 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.50 tons/yr[(1)], 0.0194 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 2.11 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 127 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0023 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.00063 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 3,158 tons/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-390-P3 |

(1) Standard is a twelve month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Startup Heater (EU 11) shall only combust natural gas.

B. The natural gas consumption for the Startup Heater (EU 11) shall not exceed 48.659 million cubic feet (MMCF) of natural gas per year (yr). The owner or operator shall:
   (1) For the first twelve (12) months of operation, determine the total amount of fuel used (in cubic feet/month) by the Startup Heater (EU 11) for each month of operation.
   (2) After the first twelve (12) months of operation, determine the cumulative amount of fuel used (in cubic feet/year) by the Startup Heater (EU 11) on a rolling-12-month basis for each month of operation.

C. The owner or operator shall calculate the monthly $CO_2e$ emissions and the twelve (12) month rolling total amount of $CO_2e$ emissions. These emissions shall be calculated by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) found in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of the permits for Project Number 12-219 (October 26, 2012) which listed the following GWPs:
   - $CO_2 = 1$
   - $CH_4 = 21$
   - $N_2O = 310$

D. For GHG emissions, the owner or operator shall:
   (1) Keep a copy on-site of the required work practice manual documenting all efficiency practices and practices to reduce GHG emissions (i.e. a *"Work Practices Manual"*) for the facility (Plant Number 56-10-001).
   (2) Implement the practices contained within the *Work Practices Manual*.
   (3) Revise the *Work Practices Manual* and submit the revisions to the Department as necessary to document any proposed efficiency changes. The revised *Work Practices Manual* shall be implemented upon the Department's approval of the proposed changes.

**Additional Recordkeeping Requirements for Compliance Demonstration**

The owner or operator shall use a mass balance for compliance with the $CO_2$ limit by:
   (a) Obtaining an analysis of the natural gas carbon (C) content at least once per month. Data can be averaged over the month if the owner or operator obtains data more frequently.
   (b) Keep a record of the carbon (C) content data.
   (c) Track the daily heat input of natural gas into the Startup Heater (EU 11).
   (d) Calculate the daily $CO_2$ emissions using the following formula:

$$CO_2 \left(\frac{\text{tons}}{\text{day}}\right) = \frac{H_{NG} \left(\frac{\text{MMBTU}}{\text{day}}\right) \text{x } C_{NG} \left(\frac{\text{lb}}{\text{MMBTU}}\right)}{2000 \frac{\text{lb}}{\text{ton}}}$$

Where: H = Heat Content

C = Carbon Content (current month's value)
NG = Natural Gas

(e) Calculate the monthly $CO_2$ emissions for each month of operation.

Authority for Requirement: DNR Construction Permit 12-A-390-P3

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 115
Stack Opening, (inches, dia.): 85
Exhaust Flow Rate (scfm): 15,000
Exhaust Temperature (°F): 1,660
Discharge Style: Obstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-390-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when the emission unit on this emission point is at or near full capacity. If visible emissions are observed, this, would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 12

Associated Equipment

Associated Emission Unit ID Number: EU 12
Emissions Control Equipment ID Number: CE 12
Emissions Control Equipment Description: Wet Scrubber

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Emission Unit vented through this Emission Point: EU 12
Emission Unit Description: Urea Granulator
Raw Material/Fuel: Granulated Urea
Rated Capacity: 60.6 tons/hr

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | 40% |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2<br>567 IAC 23.3(2)"d" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 53.1 tons/yr[(1)], 0.20 lb/ton |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 12.13 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 53.1 tons/yr[(1)], 0.20 lb/ton |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 13.78 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 53.1 tons/yr[(1)], 0.20 lb/ton |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.1 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-391-P2<br>567 IAC 23.3(2)"a" |

(1) Standard is a twelve month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The minimum total liquor feed rate to the Wet Scrubber (CE 12) shall be 10.3 $m^3$/hr on an hourly average. The owner or operator shall:
   (1) Collect and record the total liquor feed rate to the Wet Scrubber (CE 12) on an hourly basis when the emission units in this permit are operating, except for normal meter maintenance, calibration, and replacement, and malfunction.

B. The owner or operator shall properly operate and maintain equipment to monitor the total liquor feed rate. The monitoring device(s) and any recorders shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals or per written facility specific operation and maintenance plan.

C. The following requirements are Best Available Control Technology (BACT) work practices for startup, shutdown, and malfunction (SSM) operations:

- Startup:
  Startup of the urea granulation plant from cold conditions begins with the introduction of liquid urea feed, which has been enhanced by urea formaldehyde precondensate, and fluidization air into the granulator. The startup procedure takes approximately twelve (12) hours from feeding urea melt to granulation. During plant startup, several individual processes and equipment begin operation including two cooling sections, crusher, bucket elevator, wet scrubber for particulate control and acidic scrubber for ammonia control. Exhaust temperatures from the granulator, first cooling section within the granulator and final cooling section within the bulk flow cooler are required to be 107°C, 69°C and 50°C, respectively. The startup period ends when:
  1) operating temperatures across the process reach the required profile,
  2) stable granulated urea production is achieved and
  3) emission control equipment has reached required reduction efficiencies.

- Shutdown:

Shutdown of the urea granulation plant from full load requires approximately twelve (12) hours. The shutdown period begins when air flow to the granulator and coolers falls below the levels needed to maintain the required temperature profile and stable granulated urea production. The particulate/ammonia scrubber system will be discontinued when exhaust temperatures from the granulator and coolers rise above the levels indicated for startup.

- Malfunction:
  During malfunction, the work practice standards shall be followed for the emission unit and its air pollution control equipment as stated in 567 IAC 24.1(4).

Authority for Requirement: DNR Construction Permit 12-A-391-P2

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 170
Stack Opening, (inches, dia.): 94
Exhaust Flow Rate (scfm): 158,400
Exhaust Temperature (°F): 110
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-391-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Stack Testing:**

Pollutant – $PM_{2.5}$
Stack Test to be Completed – Quarterly(1)
Test Method – 40 CFR 51, Appendix M, 201A with 202
Authority for Requirement: DNR Construction Permit 12-A-391-P2

Pollutant – $PM_{10}$
Stack Test to be Completed – Quarterly(1)
Test Method – 40 CFR 51, Appendix M, 201A with 202
Authority for Requirement: DNR Construction Permit 12-A-391-P2

Pollutant – PM – State
Stack Test to be Completed – Quarterly[(1)]
Test Method – 40 CFR 60, Appendix A, Method 5
40 CFR 51, Appendix M, Method 202
Authority for Requirement: DNR Construction Permit 12-A-391-P2

[(1)] The owner or operator shall conduct stack testing once per calendar quarter with a minimum of sixty (60) days between each quarterly test. Upon the completion of eight (8) quarterly tests that demonstrate compliance with the emission limits of this permit the owner or operator may request to reduce the frequency of the compliance testing.

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP CTA and EP CTB

Associated Equipment

Associated Emission Unit ID Numbers: EU CTA and EU CTB
Emissions Control Equipment ID Numbers: CE CTA and CE CTB
Emissions Control Equipment Description: Drift Eliminators

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Emission Units vented through these Emission Points: EU CTA and EU CTB
Emission Unit Description: Cooling Tower A and Cooling Tower B
Raw Material/Fuel: Cooling Water
Rated Capacity: 150,000 gal/min (EU CTA) and 188,000 gal/min (EU CTB)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.0005%[(1)] |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.97 lb/hr for EP CTA, and 1.19 lb/hr for EP CTB |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.0005%[(1)] |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.97 lb/hr for EP CTA, and 1.19 lb/hr for EP CTB |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.0005%[(1)] |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.1 gr/dscf |
| Authority for Requirement: | DNR Construction Permits 12-A-392-P3 and 12-A-393-P3<br>567 IAC 23.3(2)"a" |

(1) This is the required control efficiency of the drift eliminator (gallons of drift per gallon of cooling water flow).

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. A minimum of one (1) analysis for TDS shall be conducted each month. If more than one (1) analysis is conducted the average of the analyses shall be used to demonstrate compliance.

B. The total dissolved solids (TDS) of the water used shall not exceed 2,500 ppm (monthly average). The owner or operator shall:
   (1) Keep a copy of each analysis of the TDS of the water used for each calendar month these emission units are in use and
   (2) Calculate the monthly average TDS of the water used in these emission units.

C. Chromium based and HAP containing water treatment chemicals (i.e. biocides, fungicides, scale inhibitors, etc.) shall not be used in these emission units.

D. The owner or operator shall keep a copy of the Safety Data Sheet (MSDS) for each water treatment chemical used in these emission units.

E. Best Available Control Technology (BACT) for VOC is a work practice that consists of the facility (Plant Number 56-10-001) using best management practices by limiting the use of VOC containing materials and the amount of VOC in those materials.

Authority for Requirement: DNR Construction Permits 12-A-392-P3 and 12-A-393-P3

**Emission Point Characteristics**

*The emission points shall conform to the specifications listed below.*

| Stack Characteristics | EP CTA | EP CTB |
|---|---|---|
| Stack Height, (ft, from the ground): | 60 | 60 |
| Stack Opening, (inches, dia.): | Eight (8) cells @ 408 inches each | Ten (10) cells @ 408 inches each |
| Exhaust Flow Rate (scfm): | Eight (8) cells @ 1,097,600 scfm each | Ten (10) cells @ 1,069,400 scfm each |
| Exhaust Temperature (°F): | 70 | 70 |
| Discharge Style: | Unobstructed Vertical | Unobstructed Vertical |

Authority for Requirement: DNR Construction Permits 12-A-392-P3 and 12-A-393-P3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP P1

Associated Equipment

Associated Emission Unit ID Numbers: EU P-1A, EU P-1B, and EU P-1C
Emissions Control Equipment ID Numbers: CE P-1A, CE P-1B, and CE P-1C
Emissions Control Equipment Description: Cartridge Filters

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Emission Units vented through this Emission Point: EU P-1A, EU P-1B, and EU P-1C
Emission Unit Description: Granulator Transfer, Warehouse Transfer, Reclaim Transfer
Raw Material/Fuel: Granulated Urea
Rated Capacity: 3,000 tons/day for each transfer point

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE)[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-394-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.04 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-394-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.15 lb/hr[(2)] |
| Authority for Requirement: | DNR Construction Permit 12-A-394-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.1 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-394-P2<br>567 IAC 23.3(2)"a" |

(1) "No visible emissions (NVE)" shall be observed from any openings on the building(s) the transfer points vent into.
(2) Total emissions from the three (3) transfer points.

**Operational Limits & Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. The cartridge filters (CEs P-1A, P-1B, and P-1C) shall be operated and maintained according to the manufacturer's specifications.

B. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for these emission units and their control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
C. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**
*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. A log of all maintenance and inspection activities performed on the cartridge filters (CEs P-1A, P-1B, and P-1C). This log shall include, but is not necessarily limited to:
   - The date and time any inspection and/or maintenance was performed on the cartridge filters (CEs P-1A, P-1B, and P-1C);
   - Any issues identified during the inspection;
   - Any issues addressed during the maintenance activities;
   - Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 12-A-394-P2

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): Vents Inside
Stack Opening, (inches, dia.): Vents Inside
Exhaust Flow Rate (scfm): Vents Inside
Exhaust Temperature (°F): Vents Inside
Discharge Style: Vents Inside
Authority for Requirement: DNR Construction Permit 12-A-394-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when the emission units on this emission point are at or near full capacity. If visible emissions are observed, this, would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP P2

Associated Equipment

Associated Emission Unit ID Number: EU P2
Emissions Control Equipment ID Number: CE P2
Emissions Control Equipment Description: Bin Vent Filter

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Emission Unit vented through this Emission Point: EU P2
Emission Unit Description: Granulated Urea Truck Loading
Raw Material/Fuel: Granulated Urea
Rated Capacity: 1,320 metric tons/day and 1,454 tons/day

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.11 tons/yr[(1)], 0.00125 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.10 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.44 tons/yr[(1)], 0.005 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.10 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.44 tons/yr[(1)], 0.005 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| Emission Limit(s): | 0.1 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 12-A-396-P2<br>567 IAC 23.3(2)"a" |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
B. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Monitoring & Recordkeeping Requirements**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

No operating condition monitoring is required for this emission point at this time.

Authority for Requirement: DNR Construction Permit 12-A-396-P2

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 90
Stack Opening, (inches, dia.): 22
Exhaust Flow Rate (scfm): 2,300
Exhaust Temperature (°F): 70
Discharge Style: Unobstructed Vertical(1)
Authority for Requirement: DNR Construction Permit 12-A-396-P2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the

temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

(1) The facility has indicated that the discharge style is Horizontal. The facility may submit a construction permit application to correct this.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when the emission unit on this emission point is at or near full capacity. If visible emissions are observed, this, would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☒ **No** ☐

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

*Facility operation and maintenance plans must be sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the applicable requirements.*

*Facility operation and maintenance plans are to be developed by the facility within six(6) months of the issuance date of this permit and the data pertaining to the plan maintained on site for at least 5 years. The plan and associated recordkeeping provides documentation of this facility's implementation of its obligation to operate according to good air pollution control practice.*

*Good air pollution control practice is achieved by adoption of quality control standards in the operation and maintenance procedures for air pollution control that are comparable to industry quality control standards for the production processes associated with this emission point.*

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP MDEA-TK

Associated Equipment

Associated Emission Unit ID Number: EU MDEA-TK
Emissions Control Equipment ID Number: CE MDEA-TK
Emissions Control Equipment Description: Nitrogen ($N_2$) Gas Blanket

---

Emission Unit vented through this Emission Point: EU MDEA-TK
Emission Unit Description: Methyl-diethanol Amine (MDEA) Storage Tank
Raw Material/Fuel: MDEA
Rated Capacity: 395,300 gallons

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.1 tons/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-400-P1 |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This emission unit (EU MDEA-TK) shall store only Methyl-diethanol Amine (MDEA).
B. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
C. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Numbers 12-219 and 13-355 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**
*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For the first twelve (12) months of operation, determine the total amount of VOC emitted from this emission point (EP MDEA-TK) for each month of operation.
B. After the first twelve (12) months of operation, determine the cumulative amount of VOC emitted from this emission point (EP MDEA-TK) on a rolling-12-month basis for each month of operation.

Authority for Requirement: DNR Construction Permit 12-A-400-P1

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 42
Stack Opening, (inches, dia.): 2
Exhaust Flow Rate (scfm): Displacement
Exhaust Temperature (°F): 70
Discharge Style: Obstructed Vertical
Authority for Requirement: DNR Construction Permit 12-A-400-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP HR

Associated Equipment

Associated Emission Unit ID Number: EU HR
Emissions Control Equipment ID Number: CE HR
Emissions Control Equipment Description: Paved Road, Water Flushing and Sweeping

---

Emission Unit vented through this Emission Point: EU HR
Emission Unit Description: Product Haul Roads
Raw Material/Fuel: Truck Traffic
Rated Capacity: 1,285 vehicle miles traveled (VMT)/day, 294,292 VMT/yr

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE)[(1)] |
| Authority for Requirement: | DNR Construction Permit 12-A-401-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.08 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-401-P2 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.34 lb/hr |
| Authority for Requirement: | DNR Construction Permit 12-A-401-P2 |

[(1)] No visible emissions shall be observed beyond the lot line of the property.

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. All haul roads at the facility (plant number 56-10-001) shall be paved.

B. Traffic on the haul roads shall not exceed nineteen (19) miles per hour. The speed limit shall be posted and enforced on all facility haul roads. The owner or operator shall maintain a record of all actions taken by the owner or operator to enforce the nineteen (19) mile per hour speed limit on the haul roads.

C. The haul road surface silt loading shall not exceed 0.6 $g/m^2$. Performance testing is required to be completed to demonstrate compliance with the silt loading limit.
   (1) Performance testing on the haul road surface silt loading limit shall be completed on a quarterly basis. For each performance test, the silt loading sampling shall be done for at least three (3) different locations and immediately prior to the next dust suppressant application. After four (4) successful tests the facility may petition the Department to relieve the testing requirement.
   (2) Silt load testing shall be conducted according to the procedures outlined in AP-42, Appendix C.1 (Procedures for Sampling Surface/Bulk Dust Loading) and C.2 (Procedures for Laboratory Analysis of Surface/Bulk Dust Loading Samples).
   (3) The owner or operator shall maintain a record of all silt loading content testing conducted on the Product Haul Roads (EU HR).

D. All spills on the haul road surface shall be cleaned up as soon as possible after the spill occurs.

E. Fugitive emissions of paved haul roads shall be controlled by either completing daily water flushing followed by vacuum sweeping or by obtaining a vacuum sweeper that is certified to meet a minimum of 80% overall control of emissions and completing daily sweeping. Sweeping and watering are not required in the following situations:
   (1) Sweeping and watering need not occur on any day that the haul road is not in use.
   (2) Sweeping and watering need not occur when a rain gauge located at the facility indicates that at least 0.2 inches of precipitation (water equivalent) has occurred within the preceding 24-hour time period.
   (3) Sweeping and watering will not be required on calendar days where the daily high temperature is below 35 degrees F.
   (4) If a facility has applied salt or sand for worker or driver safety the facility is not required to sweep or wash until the road has returned to driving conditions that no longer require the use of salt or sand.

F. The owner or operator shall
   (1) Record the frequency of cleaning performed on the Product Haul Roads (EU HR);
   (2) Record any deviations from Condition E due to either suspended use of the Product Haul Roads (EU HR) or weather conditions; and
   (3) Record the type of cleaning (i.e. vacuum sweeping, washing, etc.) performed on the Product Haul Roads (EU HR) for each cleaning event.

G. The owner or operator shall:
   (1) Record the vehicle miles traveled (VMT) each day on the Product Haul Roads (EU HR);
   (2) Record the vehicle miles traveled (VMT) each month on the Product Haul Roads (EU HR);
   (3) Calculate the monthly PM, $PM_{10}$, and $PM_{2.5}$ emissions for the Product Haul Roads (EU HR) based on the monthly VMT; and
   (4) Calculate the twelve (12) month rolling total amount of PM, $PM_{10}$, and $PM_{2.5}$ emissions for the Product Haul Roads (EU HR) based on the monthly VMT.

Authority for Requirement: DNR Construction Permit 12-A-401-P2

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

There is no stack associated with the Product Haul Roads (EU HR).

Authority for Requirement: DNR Construction Permit 12-A-401-P2

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 13

Associated Equipment

Associated Emission Unit ID Number: EU 13

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Emission Unit vented through this Emission Point: EU 13
Emission Unit Description: Engine EDG 3101
Raw Material/Fuel: Diesel
Rated Capacity: 2,206 bhp (104.6 gal/hr; 1,500 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.17 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.66 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.17 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.66 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.17 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 4.96 tons/yr[3], 6.0 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 6.4 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.33 tons/yr[3], 0.4 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 2.89 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 11.6 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 642 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permit 14-A-042-P1 |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

(2) Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:
- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

(3) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

(5) 4.5 grams/bhp-hr = 6.0 grams/kW-hr.

(6) 4.8 grams/bhp-hr = 6.4 grams/kW-hr.

(7) 0.3 grams/bhp-hr = 0.4 grams/kW-hr.

(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

(9) 1.16 lb/bhp-hr = 1.55 lb/kW-hr.

(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR 98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of October 26, 2012 which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use of the engines in emergency situations provided that the annual operating hours

limit established in Condition B. is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack

locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D. listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 14-A-042-P1

**NESHAP and NSPS Applicability**

This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). This engine is an emergency stationary internal combustion engine that is not a fire pump engine.

This engine is of the source type regulated by Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 14-A-042-P1
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 17.5
Stack Opening, (inches, dia.): 16
Exhaust Flow Rate (scfm): 4,700
Exhaust Temperature (°F): 760
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 14-A-042-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 14

Associated Equipment

Associated Emission Unit ID Number: EU 14

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Emission Unit vented through this Emission Point: EU 14
Emission Unit Description: Emergency Cooling Water Pump #1
Raw Material/Fuel: Diesel
Rated Capacity: 415 bhp (20.9 gal/hr; 310 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.03 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.14 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.03 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.14 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.03 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.64 tons/yr[3], 3.75 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.04 tons/yr[3], 0.25 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.60 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 2.39 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

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|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

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|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 121 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permit 14-A-043-P1 |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

(2) Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:
- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

(3) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

(5) 2.8 grams/bhp-hr = 3.75 grams/kW-hr.

(6) 3.0 grams/bhp-hr = 4.0 grams/kW-hr.

(7) 0.2 grams/bhp-hr = 0.25 grams/kW-hr.

(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

(9) 1.16 lb/bhp-hr = 1.55 lb/kW-hr.

(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of Project Number 12-219 (October 26, 2012) which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use

of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 14-A-043-P1

**NESHAP and NSPS Applicability**

This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). This engine is an emergency stationary internal combustion engine that is not a fire pump engine.

This engine is subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 14-A-043-P1
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 22
Stack Opening, (inches, dia.): 7.25
Exhaust Flow Rate (scfm): 600
Exhaust Temperature (°F): 940
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 14-A-043-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 15

Associated Equipment

Associated Emission Unit ID Number: EU 15

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Emission Unit vented through this Emission Point: EU 15
Emission Unit Description: Emergency Cooling Water Pump #2 (Downstream)
Raw Material/Fuel: Diesel
Rated Capacity: 746 bhp (39.9 gal/hr; 556 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.06 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.25 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.06 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.25 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.06 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 1.15 tons/yr[3], 3.75 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.08 tons/yr[3], 0.25 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 1.07 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 4.29 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 217 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permit 14-A-044-P1 |

[(1)] Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

[(2)] Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:

- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

[(3)] Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

[(4)] 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

[(5)] 2.8 grams/bhp-hr = 3.75 grams/kW-hr.

[(6)] 3.0 grams/bhp-hr = 4.0 grams/kW-hr.

[(7)] 0.2 grams/bhp-hr = 0.25 grams/kW-hr.

[(8)] 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

[(9)] 1.16 lb/bhp-hr = 1.55lb/kW-hr.

[(10)] Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of Project Number 12-219 (October 26, 2012) which listed the following GWPs:

- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use

of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 14-A-044-P1

**NESHAP and NSPS Applicability**

This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). This engine is an emergency stationary internal combustion engine that is not a fire pump engine.

This engine is subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 14-A-044-P1
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 22
Stack Opening, (inches, dia.): 7.25
Exhaust Flow Rate (scfm): 1,700
Exhaust Temperature (°F): 940
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 14-A-044-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 16

Associated Equipment

Associated Emission Unit ID Number: EU 16

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Emission Unit vented through this Emission Point: EU 16
Emission Unit Description: EDG 5101
Raw Material/Fuel: Diesel
Rated Capacity: 546 bhp (28.4 gal/hr; 350 kW)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%(1) |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.04 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.15 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.04 tons/yr(3), 0.20 g/kW-hr(4) |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.15 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.04 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.72 tons/yr[3], 3.75 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.05 tons/yr[3], 0.25 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.68 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 2.70 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 159 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permit 14-A-045-P1 |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

(2) Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:
- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

(3) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

(5) 2.8 grams/bhp-hr = 3.75 grams/kW-hr.

(6) 3.0 grams/bhp-hr = 4.0 grams/kW-hr.

(7) 0.2 grams/bhp-hr = 0.25 grams/kW-hr.

(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

(9) 1.16 lb/bhp-hr = 1.55lb/kW-hr.

(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of Project Number 12-219 (October 26, 2012) which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use

of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permit 14-A-045-P1

**NESHAP and NSPS Applicability**

This engine is subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). This engine is an emergency stationary internal combustion engine that is not a fire pump engine.

This engine is subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). This engine is a new reciprocating internal combustion engine located at an area source of HAP. In accordance with §63.6590(c)(1), the engine must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to this engine under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permit 14-A-045-P1
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 8
Stack Opening, (inches, dia.): 6
Exhaust Flow Rate (scfm): 1,300
Exhaust Temperature (°F): 940
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permit 14-A-045-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Numbers: EP 17, EP 18, EP 19, EP 20

Associated Equipment

| EP | EU | EU Description | Raw Material | BHP | Rated Capacity (gal/hr, kW) | DNR Construction Permit |
|---|---|---|---|---|---|---|
| EP 17 | EU 17 | Emergency Generator Well 11 | Diesel | 318 | 15.3, 200 | 14-A-046-P1 |
| EP 18 | EU 18 | Emergency Generator Well 12 | Diesel | 318 | 15.3, 200 | 14-A-047-P1 |
| EP 19 | EU 19 | Emergency Generator Well 13 | Diesel | 318 | 15.3, 200 | 14-A-048-P1 |
| EP 20 | EU 20 | Emergency Generator Well 14 | Diesel | 318 | 15.3, 200 | 14-A-049-P1 |

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

Pollutant: Opacity
BACT Emission Limit(s): 5%(1)
Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1

Pollutant: Opacity
Emission Limit(s): See Footnote 2
Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1
40 CFR 60 Subpart IIII
40 CFR 89.113
567 IAC 23.1(2)"yyy"

Pollutant: Particulate Matter ($PM_{2.5}$)
BACT Emission Limit(s): 0.02 tons/yr(3), 0.20 g/kW-hr(4)
Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1

Pollutant: Particulate Matter ($PM_{2.5}$)
Emission Limit(s): 0.09 lb/hr
Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.02 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.09 lb/hr |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.02 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.41 tons/yr[3], 3.75 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.03 tons/yr[3], 0.25 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.39 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 1.54 lb/hr |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 93 tons/yr[3],[10] |
| Authority for Requirement: | DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1 |

[1] Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

[2] Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:

- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

[3] Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.
(5) 2.8 grams/bhp-hr = 3.75 grams/kW-hr.
(6) 3.0 grams/bhp-hr = 4.0 grams/kW-hr.
(7) 0.2 grams/bhp-hr = 0.25 grams/kW-hr.
(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.
(9) 1.16 lb/bhp-hr = 1.55 lb/kW-hr.
(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of Project Number 12-219 (October 26, 2012) which listed the following GWPs:

- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. The following operational limits and requirements apply to each emission point.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.
    ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.
D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
    i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
    ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.
E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.
F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured

according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 60.4211(g).
H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer's emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.
I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department's review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department's approval of the proposed changes.
J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner. The following reporting and recordkeeping requirements apply to each emission point.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index

or aromatic content of the fuel delivered; or

iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.

D. The owner or operator shall maintain the following monthly records:
   i. the number of hours that the engine operated for maintenance checks and readiness testing;
   ii. the number of hours that the engine operated for allowed non-emergency operations;
   iii. the total number of hours that the engine operated; and
   iv. the rolling 12-month total amount of the number of hours that the engine operated.

E. The owner or operator shall maintain the following annual records:
   i. the number of hours that the engine operated for maintenance checks and readiness testing; and
   ii. the number of hours that the engine operated for allowed non-emergency operations.

F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1

**NESHAP and NSPS Applicability**

These engines are subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards (NSPS). These engines are emergency stationary internal combustion engines that are not fire pump engines.

These engines are subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). These engines are new reciprocating internal combustion engines located at an area source of HAP. In accordance with §63.6590(c)(1), the engines must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to these engines under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**

*The emission points shall conform to the specifications listed below.*

| EP | Stack Height (ft, from the ground) | Stack Opening (dia. inch) | Exhaust Flow Rate (scfm) | Exhaust Temperature (°F) | Discharge Style |
|---|---|---|---|---|---|
| EP 17 | 21.5 | 6 | 600 | 980 | Unobstructed Vertical |
| EP 18 | 23.3 | 6 | 600 | 980 | Unobstructed Vertical |
| EP 19 | 24.9 | 6 | 600 | 980 | Unobstructed Vertical |
| EP 20 | 26 | 6 | 600 | 980 | Unobstructed Vertical |

Authority for Requirement: DNR Construction Permits 14-A-046-P1, 14-A-047-P1, 14-A-048-P1, and 14-A-049-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 23 and EP 25

Associated Equipment

Associated Emission Unit ID Numbers: EU 23 and EU 25

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Emission Units vented through these Emission Points: EU 23 and EU 25
Emission Unit Description: Emergency Generator #4 and Emergency Generator #5
Raw Material/Fuel: Diesel
Rated Capacity: 268 bhp (14.9 gal/hr; 200 kW) per unit

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | 5%[(1)] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Opacity |
| Emission Limit(s): | See Footnote 2 |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P<br>40 CFR 60 Subpart IIII<br>40 CFR 89.113<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.02 tons/yr[(3)], 0.20 g/kW-hr[(4)] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.09 lb/hr |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.02 tons/yr[(3)], 0.20 g/kW-hr[(4)] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.09 lb/hr |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.02 tons/yr[3], 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – Federal |
| Emission Limit(s): | 0.20 g/kW-hr[4] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Sulfur Dioxide ($SO_2$) |
| Emission Limit(s): | 2.5 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P<br>567 IAC 23.3(3)"b" |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) |
| BACT Emission Limit(s): | 0.41 tons/yr[3], 3.75 g/kW-hr[5] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Nitrogen Oxides ($NO_x$) + Non-Methane Hydrocarbons (NMHC) |
| Emission Limit(s): | 4.0 g/kW-hr[6] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.03 tons/yr[3], 0.25 g/kW-hr[7] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| BACT Emission Limit(s): | 0.39 tons/yr[3], 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 3.5 g/kW-hr[8] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P<br>40 CFR 60 Subpart IIII<br>567 IAC 23.1(2)"yyy" |

| | |
|---|---|
| Pollutant: | Carbon Monoxide (CO) |
| Emission Limit(s): | 1.54 lb/hr |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Carbon Dioxide ($CO_2$) |
| BACT Emission Limit(s): | 1.55 lb/kW-hr[9] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Methane ($CH_4$) |
| BACT Emission Limit(s): | 0.0066 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Nitrous Oxide ($N_2O$) |
| BACT Emission Limit(s): | 0.0013 lb/MMBtu |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

| | |
|---|---|
| Pollutant: | Carbon Dioxide Equivalents ($CO_2e$) |
| BACT Emission Limit(s): | 78 tons/yr[(3),(10)] |
| Authority for Requirement: | DNR Construction Permits 14-A-050-P1 and 15-A-605-P |

(1) Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

(2) Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:
- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

(3) Standard is a twelve month rolling total based on an annual operating limit of 500 hours per year.

(4) 0.15 grams/bhp-hr = 0.20 grams/kW-hr.

(5) 2.8 grams/bhp-hr = 3.75 grams/kW-hr.

(6) 3.0 grams/bhp-hr = 4.0 grams/kW-hr.

(7) 0.2 grams/bhp-hr = 0.25 grams/kW-hr.

(8) 2.6 grams/bhp-hr = 3.5 grams/kW-hr.

(9) 1.16 lb/bhp-hr = 1.55lb/kW-hr.

(10) Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the date of the issuance of Project Number 12-219 (October 26, 2012) which listed the following GWPs:
- $CO_2$=1
- $CH_4$=21
- $N_2O$=310

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. The following operational limits and requirements apply to each emission point.*

A. This engine shall be fired by diesel fuel only.
B. This emission unit shall not operate more than 500 hours per rolling twelve (12) month period.
C. This engine is limited to the following operation:
    i. As an emergency stationary internal combustion engine as defined in 40 CFR 60.4219 and in accordance with 40 CFR 60.4211 there is no time limit on the use

of the engines in emergency situations provided that the annual operating hours limit established in Condition B is not exceeded. In accordance with 40 CFR 60.4211, the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.

ii. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.

D. In accordance with 60.4207(b), the diesel fuel oil burned in this engine shall meet the following specifications from 40 CFR 80.510(b) for nonroad diesel fuel:
   i. a maximum sulfur content of 15 ppm (0.0015%) by weight; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.

E. In accordance with 60.4209(a), the engine shall be equipped with a non-resettable hour meter.

F. Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205(c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

G. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in 60.4211(g).

H. In accordance with 60.4211(a), this engine shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions. The owner or operator may only change emission-related engine settings that are permitted by the manufacturer.

I. The owner or operator shall prepare a work practice manual documenting all efficiency practices and practices to reduce greenhouse gas (GHG) emissions (i.e. a *"Work Practices Manual"*) at the facility (Plant Number 56-10-001), and submit the manual to the Department prior to the completion of construction of DNR Project Numbers 12-219, 13-355, and 15-142. This manual shall specifically address control equipment operation and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 56-10-001). The *Work Practices Manual* shall be implemented upon either the Department’s review and approval or the completion of construction of DNR Project Number 12-219, 13-355, and 15-142 whichever is later. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility (Plant Number 56-10-001). The revised manual shall be implemented upon the Department’s approval of the proposed changes.

J. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.

K. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner. The following reporting and recordkeeping requirements apply to each emission point.*

A. During the first twelve (12) months of operation, determine the total hours of operation for this emission unit for each month of operation.
B. After the first twelve (12) months of operation, determine the annual hours of operation for this emission unit on a rolling twelve (12) month basis for each month of operation.
C. The owner or operator of the engine shall comply with the requirements of Operating Limit Condition D listed above by one of the following methods:
    i. have the fuel supplier certify that the fuel delivered meets the definition of non-road diesel fuel as defined in 40 CFR 80.510(b);
    ii. obtain a fuel analysis from the supplier showing the sulfur content and cetane index or aromatic content of the fuel delivered; or
    iii. perform an analysis of the fuel to determine the sulfur content and cetane index or aromatic content of the fuel received.
D. The owner or operator shall maintain the following monthly records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing;
    ii. the number of hours that the engine operated for allowed non-emergency operations;
    iii. the total number of hours that the engine operated; and
    iv. the rolling 12-month total amount of the number of hours that the engine operated.
E. The owner or operator shall maintain the following annual records:
    i. the number of hours that the engine operated for maintenance checks and readiness testing; and
    ii. the number of hours that the engine operated for allowed non-emergency operations.
F. The owner or operator shall complete any additional recordkeeping and monitoring as required by NSPS Subpart IIII not specifically mentioned in this permit.

Authority for Requirement: DNR Construction Permits 14-A-050-P1 and 15-A-605-P

**NESHAP and NSPS Applicability**

These engines are subject to Subparts A [*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19] and IIII [*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*; 40 CFR §60.4200 – 40 CFR §60.4219] of the New Source Performance Standards

(NSPS). These engines are emergency stationary internal combustion engines that are not fire pump engines.

These engines are subject to Subpart ZZZZ [*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP); 40 CFR §63.6580 – 40 CFR §63.6675] of the National Emission Standards for Hazardous Air Pollutants (NESHAP). These engines are new reciprocating internal combustion engines located at an area source of HAP. In accordance with §63.6590(c)(1), the engines must comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart IIII. No further requirements apply to these engines under Subpart ZZZZ.

Authority for Requirement: DNR Construction Permits 14-A-050-P1 and 15-A-605-P
40 CFR Part 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

**Emission Point Characteristics**
*Each emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 8.5
Stack Opening, (inches, dia.): 3
Exhaust Flow Rate (scfm): 1,300
Exhaust Temperature (°F): 400
Discharge Style: Unobstructed Vertical
Authority for Requirement: DNR Construction Permits 14-A-050-P1 and 15-A-605-P

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP UF85-TK

Associated Equipment

Associated Emission Unit ID Number: EU UF85-TK
Emissions Control Equipment ID Number: CE UF85-TK
Emissions Control Equipment Description: Packed Bed Scrubber

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Emission Unit vented through this Emission Point: EU UF85-TK
Emission Unit Description: UF-85 Storage Tank
Raw Material/Fuel: Urea-Formaldehyde Concentrate (UF-85)
Rated Capacity: 31,381 gallons, 122.37 gal/min

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.025 lb/hr |
| Authority for Requirement: | DNR Construction Permit 14-A-051-P1 |

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The UF-85 Storage Tank (EU UF85-TK) shall only store materials with a maximum true vapor pressure as defined in 40 CFR §60.111b less than 15.0 kPa (2.18 psi).

B. The UF-85 Storage Tank (EU UF85-TK) shall only store UF-85 (urea-formaldehyde concentrate) which shall not have a maximum true vapor pressure greater than 0.47 kPa (0.07 psi) at 104 degrees Fahrenheit ($^{o}$F)

C. The owner or operator shall maintain a copy of the Safety Data Sheet (SDS) and Product Specification Sheet for UF-85.

Authority for Requirement: DNR Construction Permit 14-A-051-P1

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 31
Stack Opening, (inches, dia.): 4
Exhaust Flow Rate (scfm): 35
Exhaust Temperature (°F): 130
Discharge Style: Horizontal
Authority for Requirement: DNR Construction Permit 14-A-051-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☒ **No** ☐

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

*Facility operation and maintenance plans must be sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the applicable requirements.*

*Facility operation and maintenance plans are to be developed by the facility within six (6) months of the issuance date of this permit and the data pertaining to the plan maintained on site for at least 5 years. The plan and associated recordkeeping provides documentation of this facility's implementation of its obligation to operate according to good air pollution control practice.*

*Good air pollution control practice is achieved by adoption of quality control standards in the operation and maintenance procedures for air pollution control that are comparable to industry quality control standards for the production processes associated with this emission point.*

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 24

Associated Equipment

Associated Emission Unit ID Number: EU 24
Emissions Control Equipment ID Number: CE 24
Emissions Control Equipment Description: Leak Detection & Repair (LDAR) Monitoring System

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Emission Unit vented through this Emission Point: EU 24
Emission Unit Description: VOC Emissions from Equipment Leaks
Raw Material/Fuel: VOC Fugitive Emissions

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.7 tons/yr [(1)] |
| Authority for Requirement: | DNR Construction Permit 14-A-052-P1 |

[(1)] Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM) and based on the LDAR system.

**Operational Limits & Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. This component count shall be documented as to the number and types of components used. Components include, but are not limited to, valves, pumps, compressor seals, flanges, etc. All components shall be tested initially including those of vacuum service.
B. For the purposes of best available control technology (BACT), the owner or operator shall meet the standards specified in NSPS Subpart VVa (40 CFR §60.482-1a – 40 CFR §60.482-11a) for the equipment leaks associated with Project Numbers 12-219, 13-355, and 15-142.
C. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
D. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Number 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator

shall not make the proposed construction change until the owner or operator receives written approval from the Department.

**Reporting and Recordkeeping Requirements**

*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For purposes of BACT, calculate and record the VOC emissions based on the documented component count. Emission factors shall be based on EPA document 453/R-95-017 titled *"Protocol for Equipment Leak Emission Estimates."* The owner or operator shall use the following methodology to calculate VOC emissions:
   (1) Determine the component count for the new part of the plant (i.e. the equipment associated with Project Numbers 12-219 and 13-355). This count shall be updated with each modification to the facility (plant number 56-10-001).
   (2) On a monthly basis, take a minimum of five samples of liquid from five different locations within the new part of the plant (i.e. the equipment associated with Project Numbers 12-219 and 13-355) and determine the organic content of each sample. If 100% organic content is used, monthly sampling is not required. The average organic content shall be determined and used in the calculations of emissions. If after one (1) year of sampling, the average of each months samples shows less than a 2% variation over the twelve (12) month average, the twelve (12) month average may be used in future calculations and sampling may be ended. The VOC content sampling shall be completed following the procedures specified in 40 CFR §60.485a(d).
   (3) From each months leak detection tracking information, determine the following for each component type:
      a. The number or fraction of sources that were repaired the previous month that were found to be leaking this month.
      b. The number or fraction of sources that were successfully repaired after being found to leaking in the previous months' monitoring.
      c. The number or fraction of sources that were found to not be leaking during the previous months' monitoring, which were found to be leaking during this months' monitoring.
   (4) Using the information collected in Condition A(3)c above, determine the control efficiency of the leak detection and repair program as outlined in EPA's document 453/R-95-017 titled *"Protocol for Equipment Leak Emission Estimates"* (page 5-54 through 5-57). Control efficiencies listed in Table 5.2 (page 5-9) may be assumed for those components listed. If these control efficiencies are assumed, the information required by Condition A(3)c above need not be recorded for that component type.
   (5) Using the information collected above, determine the VOC emissions over the previous month from the new part of the plant (i.e. the equipment associated with Project Numbers 12-219 and 13-355) using the calculation methods outlined in EPA's document 453/R-95-017 titled *"Protocol for Equipment Leak Emission Estimates*" (page 2-11).

B. For purposes of BACT, the owner or operator shall meet all recordkeeping and reporting requirements per §60.486a and 40 CFR §60.487a.

Authority for Requirement: DNR Construction Permit 14-A-052-P1

**NESHAP and NSPS Applicability**

The equipment leaks at this facility (Plant Number 56-10-001) is subject to Subparts A (*General Provisions*; 40 CFR §60.1 – 40 CFR §60.19) and VVa (*Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006*; 40 CFR §60.480a – 40 CFR §60.489a) of the New Source Performance Standards (NSPS). However, the equipment is exempt from any of the standards in 40 CFR §60.482-1a – 40 CFR §60.482-11a as it is considered to be in *"heavy liquid service"*.

Authority for Requirement: DNR Construction Permit 14-A-052-P1
40 CFR 60 Subpart VVa
567 IAC 23.1(2)"nn"

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

There is no stack associated with the Equipment Leaks (EU 24) at the facility.

Authority for Requirement: DNR Construction Permit 14-A-052-P1

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Compliance Demonstration:**

Pollutant – VOC
Test Method and Procedure – See Note.
Authority for Requirement: DNR Construction Permit 14-A-052-P1

Note: The owner or operator shall use the test methods and procedures specified in 40 CFR §60.485a to determine compliance with this permit.

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID: Diesel Fuel Tanks

Associated Equipment

**Table 1**

| EP | EU | EU Description | Raw Material | Rated Capacity | DNR Construction Permit |
|---|---|---|---|---|---|
| EP TK09 | EU TK09 | Diesel Fuel Tank #1 | Diesel | 2,200 gal; 132,500 gal/yr | 14-A-053-P |
| EP TK10 | EU TK10 | Diesel Fuel Tank #2 | Diesel | 600 gal; 12,500 gal/yr | 14-A-060-P |
| EP TK13 | EU TK13 | Diesel Fuel Tank #3 | Diesel | 650 gal; 49,500 gal/yr | 14-A-061-P |
| EP TK14 | EU TK14 | Diesel Fuel Tank #4 | Diesel | 250 gal; 10,450 gal/yr | 14-A-062-P |
| EP TK15 | EU TK15 | Diesel Fuel Tank #5 | Diesel | 250 gal; 10,450 gal/yr | 14-A-063-P |
| EP TK16 | EU TK16 | Diesel Fuel Tank #6 | Diesel | 100 gal; 6,500 gal/yr | 14-A-064-P |
| EP TK17 | EU TK17 | Diesel Fuel Tank #7 | Diesel | 250 gal; 9,700 gal/yr | 14-A-065-P |
| EP TK18 | EU TK18 | Diesel Fuel Tank #8 | Diesel | 250 gal; 9,700 gal/yr | 14-A-066-P |
| EP TK19 | EU TK19 | Diesel Fuel Tank #9 | Diesel | 250 gal; 9,700 gal/yr | 14-A-067-P |
| EP TK20 | EU TK20 | Diesel Fuel Tank #10 | Diesel | 250 gal; 9,700 gal/yr | 14-A-068-P |
| EP TK23 | EU TK23 | Diesel Fuel Tank #11 | Diesel | 100 gal; 3,500 gal/yr | 14-A-069-P |
| EP TK25 | EU TK25 | Diesel Fuel Tank #12 | Diesel | 100 gal; 3,500 gal/yr | 15-A-606-P |

# Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**

*The emissions from each emission point shall not exceed the levels specified below.*

Pollutant: Volatile Organic Compounds (VOC)

| EP | EU Description | BACT Emission Limit | Authority for Requirement |
|---|---|---|---|
| EP TK09 | Diesel Fuel Tank #1 | 1.59 lbs/yr(1) | DNR Construction Permit 14-A-053-P |
| EP TK10 | Diesel Fuel Tank #2 | 0.30 lbs/yr(1) | DNR Construction Permit 14-A-060-P |
| EP TK13 | Diesel Fuel Tank #3 | 0.52 lbs/yr(1) | DNR Construction Permit 14-A-061-P |
| EP TK14 | Diesel Fuel Tank #4 | 0.17 lbs/yr(1) | DNR Construction Permit 14-A-062-P |
| EP TK15 | Diesel Fuel Tank #5 | 0.17 lbs/yr(1) | DNR Construction Permit 14-A-063-P |
| EP TK16 | Diesel Fuel Tank #6 | 0.09 lbs/yr(1) | DNR Construction Permit 14-A-064-P |
| EP TK17 | Diesel Fuel Tank #7 | 0.18 lbs/yr(1) | DNR Construction Permit 14-A-065-P |
| EP TK18 | Diesel Fuel Tank #8 | 0.18 lbs/yr(1) | DNR Construction Permit 14-A-066-P |
| EP TK19 | Diesel Fuel Tank #9 | 0.18 lbs/yr(1) | DNR Construction Permit 14-A-067-P |
| EP TK20 | Diesel Fuel Tank #10 | 0.18 lbs/yr(1) | DNR Construction Permit 14-A-068-P |
| EP TK23 | Diesel Fuel Tank #11 | 0.09 lbs/yr(1) | DNR Construction Permit 14-A-069-P |
| EP TK25 | Diesel Fuel Tank #12 | 0.09 lbs/yr(1) | DNR Construction Permit 15-A-606-P |

(1) Standard is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, and malfunction (SSM).

**Operational Limits & Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below.*

A. The emission units shall store only diesel fuel.
B. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
C. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to DNR Project Numbers 12-219, 13-355, and 15-142 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives

written approval from the Department.

**Reporting and Recordkeeping Requirements**
*All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. For the first twelve (12) months of operation, determine the total amount of VOC emitted from each emission point for each month of operation.
B. After the first twelve (12) months of operation, determine the cumulative amount of VOC emitted from each individual emission point on a rolling-12-month basis for each month of operation.

Authority for Requirement: See Table 1 above for list of applicable Construction Permits

**Emission Point Characteristics**
*The emission points shall conform to the specifications listed below.*

| EP | Stack Height (ft, from the ground) | Stack Opening (dia. inch) | Exhaust Flow Rate (scfm) | Exhaust Temperature (°F) | Discharge Style |
|---|---|---|---|---|---|
| EP TK09 | 7 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK10 | 5 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK13 | 5 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK14 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK15 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK16 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK17 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK18 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK19 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK20 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK23 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |
| EP TK25 | 3 | 2 | Displacement | Ambient | Obstructed Vertical |

Authority for Requirement: See Table 1 above for list of applicable Construction Permits

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP 21

Associated Equipment

Associated Emission Unit ID Number: EU 21
Emissions Control Equipment ID Number: CE 21
Emissions Control Equipment Description: Cartridge Filter

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Emission Unit vented through this Emission Point: EU 21
Emission Unit Description: Lime Silo
Raw Material/Fuel: Lime
Rated Capacity: 17.34 tons/hr (silo loading), 3,400 $ft^3$ (silo capacity)

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Opacity |
| BACT Emission Limit(s): | No Visible Emissions (NVE) |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| BACT Emission Limit(s): | 0.002 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{2.5}$) |
| Emission Limit(s): | 0.0014 lb/hr |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| BACT Emission Limit(s): | 0.005 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter ($PM_{10}$) |
| Emission Limit(s): | 0.0034 lb/hr |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

| | |
|---|---|
| Pollutant: | Particulate Matter (PM) – State |
| BACT Emission Limit(s): | 0.005 gr/dscf |
| Authority for Requirement: | DNR Construction Permit 15-A-604-P1 |

Pollutant: Particulate Matter (PM) –State
Emission Limit(s): 0.1 gr/dscf
Authority for Requirement: DNR Construction Permit 15-A-604-P1
567 IAC 23.3(2)"a"

**Operational Limits & Reporting and Recordkeeping Requirements**

*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The Cartridge Filters (CE 21) shall be operated and maintained according to the manufacturer's specifications. The owner or operator shall:
   (1) Keep a log of all maintenance and inspection activities performed on the Cartridge Filters (CE 21). This log shall include, but is not necessarily limited to:
   - The date and time any inspection and/or maintenance was performed on the Cartridge Filters (CE 21);
   - Any issues identified during the inspection;
   - Any issues addressed during the maintenance activities; and
   - Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 15-A-604-P1

**Emission Point Characteristics**

*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 51
Stack Opening, (inches, dia.): 7.63
Exhaust Flow Rate (scfm): 80
Exhaust Temperature (°F): Ambient
Discharge Style: Horizontal
Authority for Requirement: DNR Construction Permit 15-A-604-P1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**

*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

Visible emissions shall be observed on a weekly basis to ensure none occur when the emission unit on this emission point is at or near full capacity. If visible emissions are observed, this,

would be a violation and corrective action will be taken as soon as possible, but no later than eight hours from the observation of visible emissions. If weather conditions prevent the observer from conducting an opacity observation, the observer shall note such conditions on the data observation sheet. At least three attempts shall be made to retake visible emissions readings at approximately 2-hour intervals throughout the day. If all observation attempts for a week have been unsuccessful due to weather, an observation shall be made the next operating day where weather permits.

Maintain a written record of the observation and any action resulting from the observation for a minimum of five years.

Authority for Requirement: 567 IAC 22.108(3)

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP TK26 and EP TK27

Associated Equipment

Associated Emission Unit ID Numbers: EU TK26 and EU TK27

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Emission Units vented through these Emission Points: EU TK26 and EU TK27
Emission Unit Description: Off-Road Diesel Storage Tank and On-Road Diesel Storage Tank
Raw Material/Fuel: Diesel
Rated Capacity: 1,000 gallons each

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from each emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 0.4 lb/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 16-A-286-P and 16-A-287-P |

[(1)] The emission limit is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. These emission units (EU TK26 and TK27) shall store only diesel fuel.
B. The owner or operator shall maintain the following records to demonstrate compliance with the VOC lbs/yr emission limit:
   (1) For the first twelve (12) months of operation, determine the total amount of VOC emitted from each emission point (EP TK26 and TK27) for each month of operation.
   (2) After the first twelve (12) months of operation, determine the cumulative amount of VOC emitted from each emission point (EP TK26 and TK27) on a rolling-12-month basis for each month of operation.

Authority for Requirement: DNR Construction Permit 16-A-286-P and 16-A-287-P

**Emission Point Characteristics**
*Each emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 6
Stack Opening, (inches, dia.): 6
Exhaust Flow Rate (scfm): Obstructed Vertical
Exhaust Temperature (°F): Ambient
Discharge Style: Displacement
Authority for Requirement: DNR Construction Permit 16-A-286-P and 16-A-287-P

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP TK28

Associated Equipment

Associated Emission Unit ID Number: EU TK28

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Emission Unit vented through this Emission Point: EU TK28
Emission Unit Description: Gasoline Storage Tank
Raw Material/Fuel: Gasoline
Rated Capacity: 1,000 gallons

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 168.0 lb/yr[(1)] |
| Authority for Requirement: | DNR Construction Permit 16-A-288-P |

(1) The emission limit is a twelve (12) month rolling total and includes all periods of operation including periods of startup, shutdown, or malfunction (SSM).

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. This emission unit (EU TK28) shall store only gasoline.
B. The owner or operator shall maintain the following records to demonstrate compliance with the VOC lbs/yr limit in this permit:
   (1) For the first twelve (12) months of operation, determine the total amount of VOC emitted from this emission point (EP TK28) for each month of operation.
   (2) After the first twelve (12) months of operation, determine the cumulative amount of VOC emitted from this emission point (EP TK28) on a rolling-12-month basis for each month of operation.

Authority for Requirement: DNR Construction Permit 16-A-288-P

**NESHAP and NSPS Applicability**
The tank is subject to 40 CFR 63 Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. According to 40 CFR 63.11112(b) this storage tank, located at an area source, is a new storage tank as it was constructed after November 9, 2006.

**§63.11115 What are my general duties to minimize emissions?**

Each owner or operator of an affected source under this subpart must comply with the requirements of paragraphs (a) and (b) of this section.

(a) You must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(b) You must keep applicable records as specified in §63.11125(d).

**§63.11116 Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline.**

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

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

(3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;

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

(b) You are not required to submit notifications or reports as specified in §63.11125, §63.11126, or subpart A of this part, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(c) You must comply with the requirements of this subpart by the applicable dates specified in §63.11113.

(d) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with paragraph (a)(3) of this section.

**§63.11125 What are my recordkeeping requirements?**

(d) Each owner or operator of an affected source under this subpart shall keep records as specified in paragraphs (d)(1) and (2) of this section.

(1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

Authority for Requirement: 40 CFR Part 63 Subpart CCCCCC
567 IAC 23.1(4)"ec"

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 6
Stack Opening, (inches, dia.): 6
Exhaust Flow Rate (scfm): Obstructed Vertical
Exhaust Temperature (°F): Ambient
Discharge Style: Displacement
Authority for Requirement: DNR Construction Permit 16-A-288-P

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

## Emission Point ID Number: EP TK95

Associated Equipment

Associated Emission Unit ID Number: EU TK95

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Emission Unit vented through this Emission Point: EU TK95
Emission Unit Description: BFW Condensate Storage Tank
Raw Material/Fuel: BFW Condensate
Rated Capacity: 345,838 gallons

## Applicable Requirements

**Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)**
*The emissions from this emission point shall not exceed the levels specified below.*

| | |
|---|---|
| Pollutant: | Volatile Organic Compounds (VOC) |
| BACT Emission Limit(s): | 87.5 lb/yr(1) |
| Authority for Requirement: | DNR Construction Permit 18-A-406-P |

(1) The emission limit is based on a twelve (12) month rolling total.

**Operational Limits & Reporting and Recordkeeping Requirements**
*The owner/operator of this equipment shall comply with the operational limits and requirements listed below. All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner.*

A. The BFW Condensate Storage Tank (EU TK95) shall only store materials with a maximum true vapor pressure as defined in 40 CFR §60.111b less than 3.5 kPa (0.508 psi).

B. The BFW Condensate Storage Tank (EU TK95) shall only store process condensate which shall not have a maximum true vapor pressure greater than 0.124 kPa (0.018 psi) at 210 degrees Fahrenheit ($^{o}$F)

C. The owner or operator shall maintain a copy of documentation that shows:
   (1) The maximum true vapor pressure,
   (2) The maximum VOC content of the process condensate, and
   (3) The maximum HAP content of the process condensate.

Authority for Requirement: DNR Construction Permit 18-A-406-P

A. The owner or operator shall maintain the following records to demonstrate compliance with the VOC lbs/yr limit in this permit:

(1) For the first twelve (12) months of operation, determine the total amount of VOC emitted from this emission point (EP TK28) for each month of operation.
(2) After the first twelve (12) months of operation, determine the cumulative amount of VOC emitted from this emission point (EP TK28) on a rolling-12-month basis for each month of operation.

Authority for Requirement: 567 IAC 22.108(3)

**Emission Point Characteristics**
*The emission point shall conform to the specifications listed below.*

Stack Height, (ft, from the ground): 45
Stack Opening, (inches, dia.): 6
Exhaust Flow Rate (scfm): 15
Exhaust Temperature (°F): Ambient
Discharge Style: Downward
Authority for Requirement: DNR Construction Permit 18-A-406-P

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

**Monitoring Requirements**
*The owner/operator of this equipment shall comply with the monitoring requirements listed below.*

**Agency Approved Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Facility Maintained Operation & Maintenance Plan Required?** **Yes** ☐ **No** ☒

**Compliance Assurance Monitoring (CAM) Plan Required?** **Yes** ☐ **No** ☒

Authority for Requirement: 567 IAC 22.108(3)

# IV. General Conditions

This permit is issued under the authority of the Iowa Code subsection 455B.133(8) and in accordance with 567 Iowa Administrative Code chapter 22.

**G1. Duty to Comply**

1. The permittee must comply with all conditions of the Title V permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. *567 IAC 22.108(9)"a"*
2. Any compliance schedule shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based. *567 IAC 22.105 (2)"h"(3)*
3. Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be enforceable by the administrator and are incorporated into this permit. *567 IAC 22.108 (1)"b"*
4. Unless specified as either "state enforceable only" or "local program enforceable only", all terms and conditions in the permit, including provisions to limit a source's potential to emit, are enforceable by the administrator and citizens under the Act. *567 IAC 22.108 (14)*
5. It shall not be a defense for a permittee, in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. *567 IAC 22.108 (9)"b"*
6. For applicable requirements with which the permittee is in compliance, the permittee shall continue to comply with such requirements. For applicable requirements that will become effective during the permit term, the permittee shall meet such requirements on a timely basis. *567 IAC 22.108(15)"c"*

**G2. Permit Expiration**

1. Except as provided in rule 567—22.104(455B), permit expiration terminates a source’s right to operate unless a timely and complete application for renewal has been submitted in accordance with rule 567—22.105(455B). *567 IAC 22.116(2)*
2. To be considered timely, the owner, operator, or designated representative (where applicable) of each source required to obtain a Title V permit shall submit on forms or electronic format specified by the Department to the Air Quality Bureau, Iowa Department of Natural Resources, Air Quality Bureau, Wallace State Office Building, 502 E 9th St., Des Moines, IA 50319-0034, two copies (three if your facility is located in Linn or Polk county) of a complete permit application, at least 6 months but not more than 18 months prior to the date of permit expiration. An additional copy must also be sent to U.S. EPA Region VII, Attention: Chief of Air Permitting & Standards Branch, 11201 Renner Blvd., Lenexa, KS 66219. Additional copies to local programs or EPA are not required for application materials submitted through the electronic format specified by the Department. The application must include all emission points, emission units, air pollution control equipment, and monitoring devices at the facility. All emissions generating activities, including fugitive emissions, must be included. The definition of a complete application is as indicated in 567 IAC 22.105(2). *567 IAC 22.105*

**G3. Certification Requirement for Title V Related Documents**

Any application, report, compliance certification or other document submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness. All certifications shall state that, based on information and belief formed after reasonable

inquiry, the statements and information in the document are true, accurate, and complete. *567 IAC 22.107 (4)*

**G4. Annual Compliance Certification**

By March 31 of each year, the permittee shall submit compliance certifications for the previous calendar year. The certifications shall include descriptions of means to monitor the compliance status of all emissions sources including emissions limitations, standards, and work practices in accordance with applicable requirements. The certification for a source shall include the identification of each term or condition of the permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with all applicable department rules. For sources determined not to be in compliance at the time of compliance certification, a compliance schedule shall be submitted which provides for periodic progress reports, dates for achieving activities, milestones, and an explanation of why any dates were missed and preventive or corrective measures. The compliance certification shall be submitted to the administrator, director, and the appropriate DNR Field office. *567 IAC 22.108 (15)"e"*

**G5. Semi-Annual Monitoring Report**

By March 31 and September 30 of each year, the permittee shall submit a report of any monitoring required under this permit for the 6 month periods of July 1 to December 31 and January 1 to June 30, respectively. All instances of deviations from permit requirements must be clearly identified in these reports, and the report must be signed by a responsible official, consistent with 567 IAC 22.107(4). The semi-annual monitoring report shall be submitted to the director and the appropriate DNR Field office. *567 IAC 22.108 (5)*

**G6. Annual Fee**

1. The permittee is required under subrule 567 IAC 22.106 to pay an annual fee based on the total tons of actual emissions of each regulated air pollutant. Beginning July 1, 1996, Title V operating permit fees will be paid on July 1 of each year. The fee shall be based on emissions for the previous calendar year.
2. The fee amount shall be calculated based on the first 4,000 tons of each regulated air pollutant emitted each year. The fee to be charged per ton of pollutant will be available from the department by June 1 of each year. The Responsible Official will be advised of any change in the annual fee per ton of pollutant.
3. The emissions inventory shall be submitted annually by March 31 with forms specified by the department documenting actual emissions for the previous calendar year.
4. The fee shall be submitted annually by July 1 with forms specified by the department.
5. If there are any changes to the emission calculation form, the department shall make revised forms available to the public by January 1. If revised forms are not available by January 1, forms from the previous year may be used and the year of emissions documented changed. The department shall calculate the total statewide Title V emissions for the prior calendar year and make this information available to the public no later than April 30 of each year.
6. Phase I acid rain affected units under section 404 of the Act shall not be required to pay a fee for emissions which occur during the years 1993 through 1999 inclusive.
7. The fee for a portable emissions unit or stationary source which operates both in Iowa and out of state shall be calculated only for emissions from the source while operating in Iowa.
8. Failure to pay the appropriate Title V fee represents cause for revocation of the Title V permit as indicated in 567 IAC 22.115(1)"d".

**G7. Inspection of Premises, Records, Equipment, Methods and Discharges**

Upon presentation of proper credentials and any other documents as may be required by law, the permittee shall allow the director or the director's authorized representative to:

1. Enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
4. Sample or monitor, at reasonable times, substances or parameters for the purpose of ensuring compliance with the permit or other applicable requirements. *567 IAC 22.108 (15)"b"*

**G8. Duty to Provide Information**

The permittee shall furnish to the director, within a reasonable time, any information that the director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the director copies of records required to be kept by the permit, or for information claimed to be confidential, the permittee shall furnish such records directly to the administrator of EPA along with a claim of confidentiality. *567 IAC 22.108 (9)"e"*

**G9. General Maintenance and Repair Duties**

The owner or operator of any air emission source or control equipment shall:

1. Maintain and operate the equipment or control equipment at all times in a manner consistent with good practice for minimizing emissions.
2. Remedy any cause of excess emissions in an expeditious manner.
3. Minimize the amount and duration of any excess emission to the maximum extent possible during periods of such emissions. These measures may include but not be limited to the use of clean fuels, production cutbacks, or the use of alternate process units or, in the case of utilities, purchase of electrical power until repairs are completed.
4. Schedule, at a minimum, routine maintenance of equipment or control equipment during periods of process shutdowns to the maximum extent possible. *567 IAC 24.2(1)*

**G10. Recordkeeping Requirements for Compliance Monitoring**

1. In addition to any source specific recordkeeping requirements contained in this permit, the permittee shall maintain the following compliance monitoring records, where applicable:
    a. The date, place and time of sampling or measurements
    b. The date the analyses were performed.
    c. The company or entity that performed the analyses.
    d. The analytical techniques or methods used.
    e. The results of such analyses; and
    f. The operating conditions as existing at the time of sampling or measurement.
    g. The records of quality assurance for continuous compliance monitoring systems (including but not limited to quality control activities, audits and calibration drifts.)
2. The permittee shall retain records of all required compliance monitoring data and support information for a period of at least 5 years from the date of compliance monitoring sample, measurement report or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous compliance monitoring, and copies of all reports required by the permit.

3. For any source which in its application identified reasonably anticipated alternative operating scenarios, the permittee shall:

a. Comply with all terms and conditions of this permit specific to each alternative scenario.

b. Maintain a log at the permitted facility of the scenario under which it is operating.

c. Consider the permit shield, if provided in this permit, to extend to all terms and conditions under each operating scenario. *567 IAC 22.108(4), 567 IAC 22.108(12)*

**G11. Evidence used in establishing that a violation has or is occurring.**

Notwithstanding any other provisions of these rules, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions herein.

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at a source:

a. A monitoring method approved for the source and incorporated in an operating permit pursuant to 567 Chapter 22;

b. Compliance test methods specified in 567 Chapter 25; or

c. Testing or monitoring methods approved for the source in a construction permit issued pursuant to 567 Chapter 22.

2. The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:

a. Any monitoring or testing methods provided in these rules; or

b. Other testing, monitoring, or information gathering methods that produce information comparable to that produced by any method in subrule 21.5(1) or this subrule. *567 IAC 21.5(1)-567 IAC 21.5(2)*

**G12. Prevention of Accidental Release: Risk Management Plan Notification and Compliance Certification**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Act, the permittee shall notify the department of this requirement. The plan shall be filed with all appropriate authorities by the deadline specified by EPA. A certification that this risk management plan is being properly implemented shall be included in the annual compliance certification of this permit. *567 IAC 22.108(6)*

**G13. Hazardous Release**

The permittee must report any situation involving the actual, imminent, or probable release of a hazardous substance into the atmosphere which, because of the quantity, strength and toxicity of the substance, creates an immediate or potential danger to the public health, safety or to the environment. A verbal report shall be made to the department at (515) 725-8694 and to the local police department or the office of the sheriff of the affected county as soon as possible but not later than six hours after the discovery or onset of the condition. This verbal report must be followed up with a written report as indicated in 567 IAC 131.2(2). *567 IAC Chapter 131-State Only*

**G14. Excess Emissions and Excess Emissions Reporting Requirements**

1. Excess Emissions. Excess emission during a period of startup, shutdown, or cleaning of control equipment is not a violation of the emission standard if the startup, shutdown or cleaning is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions. Cleaning of control equipment which does not require the shutdown of the process equipment shall be limited to one six-minute period per one-hour period. An incident of excess emission (other than an incident during startup, shutdown or cleaning of control equipment) is a

violation. If the owner or operator of a source maintains that the incident of excess emission was due to a malfunction, the owner or operator must show that the conditions which caused the incident of excess emission were not preventable by reasonable maintenance and control measures. Determination of any subsequent enforcement action will be made following review of this report. If excess emissions are occurring, either the control equipment causing the excess emission shall be repaired in an expeditious manner or the process generating the emissions shall be shutdown within a reasonable period of time. An expeditious manner is the time necessary to determine the cause of the excess emissions and to correct it within a reasonable period of time. A reasonable period of time is eight hours plus the period of time required to shut down the process without damaging the process equipment or control equipment. A variance from this subrule may be available as provided for in Iowa Code section 455B.143. In the case of an electric utility, a reasonable period of time is eight hours plus the period of time until comparable generating capacity is available to meet consumer demand with the affected unit out of service, unless, the director shall, upon investigation, reasonably determine that continued operation constitutes an unjustifiable environmental hazard and issue an order that such operation is not in the public interest and require a process shutdown to commence immediately.

2. Excess Emissions Reporting

a. Initial Reporting of Excess Emissions. An incident of excess emission (other than an incident of excess emission during a period of startup, shutdown, or cleaning) shall be reported to the appropriate field office of the department within eight hours of, or at the start of the first working day following the onset of the incident. The reporting exemption for an incident of excess emission during startup, shutdown or cleaning does not relieve the owner or operator of a source with continuous monitoring equipment of the obligation of submitting reports required in 567-subrule 25.1(6). An initial report of excess emission is not required for a source with operational continuous monitoring equipment (as specified in 567-subrule 25.1(1) ) if the incident of excess emission continues for less than 30 minutes and does not exceed the applicable emission standard by more than 10 percent or the applicable visible emission standard by more than 10 percent opacity. The initial report may be made by electronic mail (E-mail), in person, or by telephone and shall include as a minimum the following:

i. The identity of the equipment or source operation from which the excess emission originated and the associated stack or emission point.

ii. The estimated quantity of the excess emission.

iii. The time and expected duration of the excess emission.

iv. The cause of the excess emission.

v. The steps being taken to remedy the excess emission.

vi. The steps being taken to limit the excess emission in the interim period.

b. Written Reporting of Excess Emissions. A written report of an incident of excess emission shall be submitted as a follow-up to all required initial reports to the department within seven days of the onset of the upset condition, and shall include as a minimum the following:

i. The identity of the equipment or source operation point from which the excess emission originated and the associated stack or emission point.

ii. The estimated quantity of the excess emission.

iii. The time and duration of the excess emission.

iv. The cause of the excess emission.

v. The steps that were taken to remedy and to prevent the recurrence of the incident of excess emission.

vi. The steps that were taken to limit the excess emission.

vii. If the owner claims that the excess emission was due to malfunction, documentation to support this claim. *567 IAC 24.1(1)-567 IAC 24.1(4)*

3. Emergency Defense for Excess Emissions. For the purposes of this permit, an "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include non-compliance, to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation or operator error. An emergency constitutes an affirmative defense to an action brought for non-compliance with technology based limitations if it can be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The facility at the time was being properly operated;

c. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements of the permit; and

d. The permittee submitted notice of the emergency to the director by certified mail within two working days of the time when the emissions limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph 22.108(5)"b." – See G15. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof. This provision is in addition to any emergency or upset provision contained in any applicable requirement. *567 IAC 22.108(16)*

**G15. Permit Deviation Reporting Requirements**

A deviation is any failure to meet a term, condition or applicable requirement in the permit. Reporting requirements for deviations that result in a hazardous release or excess emissions have been indicated above (see G13 and G14). Unless more frequent deviation reporting is specified in the permit, any other deviation shall be documented in the semi-annual monitoring report and the annual compliance certification (see G4 and G5). *567 IAC 22.108(5)"b"*

**G16. Notification Requirements for Sources That Become Subject to NSPS and NESHAP Regulations**

During the term of this permit, the permittee must notify the department of any source that becomes subject to a standard or other requirement under 567-subrule 23.1(2) (standards of performance of new stationary sources) or section 111 of the Act; or 567-subrule 23.1(3) (emissions standards for hazardous air pollutants), 567-subrule 23.1(4) (emission standards for hazardous air pollutants for source categories) or section 112 of the Act. This notification shall be submitted in writing to the department pursuant to the notification requirements in 40 CFR Section 60.7, 40 CFR Section 61.07, and/or 40 CFR Section 63.9. *567 IAC 23.1(2), 567 IAC 23.1(3), 567 IAC 23.1(4)*

**G17. Requirements for Making Changes to Emission Sources That Do Not Require Title V Permit Modification**

1. Off Permit Changes to a Source. Pursuant to section 502(b)(10) of the CAAA, the permittee may make changes to this installation/facility without revising this permit if:

a. The changes are not major modifications under any provision of any program required by section 110 of the Act, modifications under section 111 of the act, modifications under section 112 of the act, or major modifications as defined in 567 IAC Chapter 22.

b. The changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions);

c. The changes are not modifications under any provisions of Title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or as total emissions);

d. The changes are not subject to any requirement under Title IV of the Act (revisions affecting Title IV permitting are addressed in rules 567—22.140(455B) through 567 - 22.144(455B));.

e. The changes comply with all applicable requirements.

f. For each such change, the permitted source provides to the department and the administrator by certified mail, at least 30 days in advance of the proposed change, a written notification, including the following, which must be attached to the permit by the source, the department and the administrator:

i. A brief description of the change within the permitted facility,

ii. The date on which the change will occur,

iii. Any change in emission as a result of that change,

iv. The pollutants emitted subject to the emissions trade

v. If the emissions trading provisions of the state implementation plan are invoked, then Title V permit requirements with which the source shall comply; a description of how the emissions increases and decreases will comply with the terms and conditions of the Title V permit.

vi. A description of the trading of emissions increases and decreases for the purpose of complying with a federally enforceable emissions cap as specified in and in compliance with the Title V permit; and

vii. Any permit term or condition no longer applicable as a result of the change. *567 IAC 22.110(1)*

2. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements. *567 IAC 22.110(2)*

3. Notwithstanding any other part of this rule, the director may, upon review of a notice, require a stationary source to apply for a Title V permit if the change does not meet the requirements of subrule 22.110(1). *567 IAC 22.110(3)*

4. The permit shield provided in subrule 22.108(18) shall not apply to any change made pursuant to this rule. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the state implementation plan authorizing the emissions trade. *567 IAC 22.110(4)*

5. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes, for changes that are provided for in this permit. *567 IAC 22.108(11)*

**G18. Duty to Modify a Title V Permit**

1. Administrative Amendment.

a. An administrative permit amendment is a permit revision that does any of the following:

i. Correct typographical errors

ii. Identify a change in the name, address, or telephone number of any person identified in the permit, or provides a similar minor administrative change at the source;

iii. Require more frequent monitoring or reporting by the permittee; or

iv. Allow for a change in ownership or operational control of a source where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittee has been submitted to the director.

b. The permittee may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request. The request shall be submitted to the director.

c. Administrative amendments to portions of permits containing provisions pursuant to Title IV of the Act shall be governed by regulations promulgated by the administrator under Title IV of the Act.

2. Minor Title V Permit Modification.

a. Minor Title V permit modification procedures may be used only for those permit modifications that satisfy all of the following:

i. Do not violate any applicable requirement;

ii. Do not involve significant changes to existing monitoring, reporting or recordkeeping requirements in the Title V permit;

iii. Do not require or change a case by case determination of an emission limitation or other standard, or an increment analysis;

iv. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include any federally enforceable emissions caps which the source would assume to avoid classification as a modification under any provision under Title I of the Act; and an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Act;

v. Are not modifications under any provision of Title I of the Act; and

vi. Are not required to be processed as significant modification under rule 567 - 22.113(455B).

b. An application for minor permit revision shall be on the minor Title V modification application form and shall include at least the following:

i. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

ii. The permittee's suggested draft permit;
iii. Certification by a responsible official, pursuant to 567 IAC 22.107(4), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
iv. Completed forms to enable the department to notify the administrator and the affected states as required by 567 IAC 22.107(7).

c. The permittee may make the change proposed in its minor permit modification application immediately after it files the application. After the permittee makes this change and until the director takes any of the actions specified in 567 IAC 22.112(4) "a" to "c", the permittee must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time, the permittee need not comply with the existing permit terms and conditions it seeks to modify. However, if the permittee fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against the facility.

3. Significant Title V Permit Modification.

Significant Title V modification procedures shall be used for applications requesting Title V permit modifications that do not qualify as minor Title V modifications or as administrative amendments. These include but are not limited to all significant changes in monitoring permit terms, every relaxation of reporting or recordkeeping permit terms, and any change in the method of measuring compliance with existing requirements. Significant Title V modifications shall meet all requirements of 567 IAC Chapter 22, including those for applications, public participation, review by affected states, and review by the administrator, as those requirements that apply to Title V issuance and renewal.

The permittee shall submit an application for a significant permit modification not later than three months after commencing operation of the changed source unless the existing Title V permit would prohibit such construction or change in operation, in which event the operation of the changed source may not commence until the department revises the permit. *567 IAC 22.111-567 IAC 22.113*

**G19. Duty to Obtain Construction Permits**

Unless exempted in 567 IAC 22.1(2) or to meet the parameters established in 567 IAC 22.1(1)"c", the permittee shall not construct, install, reconstruct or alter any equipment, control equipment or anaerobic lagoon without first obtaining a construction permit, or conditional permit, or permit pursuant to rule 567 IAC 22.8, or permits required pursuant to rules 567 IAC 22.4, 567 IAC 22.5, 567 IAC 31.3, and 567 IAC 33.3 as required in 567 IAC 22.1(1). A permit shall be obtained prior to the initiation of construction, installation or alteration of any portion of the stationary source or anaerobic lagoon. *567 IAC 22.1(1)*

**G20. Asbestos**

The permittee shall comply with 567 IAC 23.1(3)"a", and 567 IAC 23.2(3)"g" when activities involve asbestos mills, surfacing of roadways, manufacturing operations, fabricating, insulating, waste disposal, spraying applications, demolition and renovation operations (*567 IAC 23.1(3)"a");* training fires and controlled burning of a demolished building *(567 IAC 23.2).*

**G21. Open Burning**

The permittee is prohibited from conducting open burning, except as provided in 567 IAC 23.2. *567 IAC 23.2 <u>except</u> 23.2(3)"j"; 567 IAC 23.2(3)"j" - State Only*

**G22. Acid Rain (Title IV) Emissions Allowances**

The permittee shall not exceed any allowances that it holds under Title IV of the Act or the regulations promulgated there under. Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners and operators of the unit or the designated representative of the owners and operators is prohibited. Exceedences of applicable emission rates are prohibited. "Held" in this context refers to both those allowances assigned to the owners and operators by USEPA, and those allowances supplementally acquired by the owners and operators. The use of any allowance prior to the year for which it was allocated is prohibited. Contravention of any other provision of the permit is prohibited. *567 IAC 22.108(7)*

**G23. Stratospheric Ozone and Climate Protection (Title VI) Requirements**

1. The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:

    a. All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to § 82.106.

    b. The placement of the required warning statement must comply with the requirements pursuant to § 82.108.

    c. The form of the label bearing the required warning statement must comply with the requirements pursuant to § 82.110.

    d. No person may modify, remove, or interfere with the required warning statement except as described in § 82.112.

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

    a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156.

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

    c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.

    d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with reporting and recordkeeping requirements pursuant to § 82.166. ("MVAC-like appliance" as defined at § 82.152)

    e. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to § 82.156.

    f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

3. If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

4. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle

has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant,

5. The permittee shall be allowed to switch from any ozone-depleting or greenhouse gas generating substances to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *40 CFR part 82*

**G24. Permit Reopenings**

1. This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. *567 IAC 22.108(9)"c"*

2. Additional applicable requirements under the Act become applicable to a major part 70 source with a remaining permit term of 3 or more years. Revisions shall be made as expeditiously as practicable, but not later than 18 months after the promulgation of such standards and regulations.

a. Reopening and revision on this ground is not required if the permit has a remaining term of less than three years;

b. Reopening and revision on this ground is not required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to 40 CFR 70.4(b)(10)(i) or (ii) as amended to May 15, 2001.

c. Reopening and revision on this ground is not required if the additional applicable requirements are implemented in a general permit that is applicable to the source and the source receives approval for coverage under that general permit. *567 IAC 22.108(17)"a", 567 IAC 22.108(17)"b"*

3. A permit shall be reopened and revised under any of the following circumstances:

a. The department receives notice that the administrator has granted a petition for disapproval of a permit pursuant to 40 CFR 70.8(d) as amended to July 21, 1992, provided that the reopening may be stayed pending judicial review of that determination;

b. The department or the administrator determines that the Title V permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Title V permit;

c. Additional applicable requirements under the Act become applicable to a Title V source, provided that the reopening on this ground is not required if the permit has a remaining term of less than three years, the effective date of the requirement is later than the date on which the permit is due to expire, or the additional applicable requirements are implemented in a general permit that is applicable to the source and the source receives approval for coverage under that general permit. Such a reopening shall be complete not later than 18 months after promulgation of the applicable requirement.

d. Additional requirements, including excess emissions requirements, become applicable to a Title IV affected source under the acid rain program. Upon approval by the administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

e. The department or the administrator determines that the permit must be revised or

revoked to ensure compliance by the source with the applicable requirements. *567 IAC 22.114(1)*

4. Proceedings to reopen and reissue a Title V permit shall follow the procedures applicable to initial permit issuance and shall effect only those parts of the permit for which cause to reopen exists. *567 IAC 22.114(2)*

5. A notice of intent shall be provided to the Title V source at least 30 days in advance of the date the permit is to be reopened, except that the director may provide a shorter time period in the case of an emergency. *567 IAC 22.114(3)*

**G25. Permit Shield**

1. The director may expressly include in a Title V permit a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

a. Such applicable requirements are included and are specifically identified in the permit; or

b. The director, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

2. A Title V permit that does not expressly state that a permit shield exists shall be presumed not to provide such a shield.

3. A permit shield shall not alter or affect the following:

a. The provisions of Section 303 of the Act (emergency orders), including the authority of the administrator under that section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the Act;

d. The ability of the department or the administrator to obtain information from the facility pursuant to Section 114 of the Act. *567 IAC 22.108 (18)*

**G26. Severability**

The provisions of this permit are severable and if any provision or application of any provision is found to be invalid by this department or a court of law, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected by such finding. *567 IAC 22.108 (8)*

**G27. Property Rights**

The permit does not convey any property rights of any sort, or any exclusive privilege. *567 IAC 22.108 (9)"d"*

**G28. Transferability**

This permit is not transferable from one source to another. If title to the facility or any part of it is transferred, an administrative amendment to the permit must be sought consistent with the requirements of 567 IAC 22.111(1). *567 IAC 22.111 (1)"d"*

**G29. Disclaimer**

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. *567 IAC 22.3(3)"c"*

**G30. Notification and Reporting Requirements for Stack Tests or Monitor Certification**
The permittee shall notify the department's stack test contact in writing not less than 30 days before a required test or performance evaluation of a continuous emission monitor is performed to determine compliance with applicable requirements of 567 – Chapter 23 or a permit condition. Such notice shall include the time, the place, the name of the person who will conduct the test and other information as required by the department. If the owner or operator does not provide timely notice to the department, the department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with applicable rules or permit conditions. Upon written request, the department may allow a notification period of less than 30 days. At the department's request, a pretest meeting shall be held not later than 15 days prior to conducting the compliance demonstration. A testing protocol shall be submitted to the department no later than 15 days before the owner or operator conducts the compliance demonstration. A representative of the department shall be permitted to witness the tests. Results of the tests shall be submitted in writing to the department's stack test contact in the form of a comprehensive report within six weeks of the completion of the testing. Compliance tests conducted pursuant to this permit shall be conducted with the source operating in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which the source shall be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the equipment manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the department that the source has been physically altered so that capacity cannot be exceeded, or the department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the department to determine whether such source is in compliance.
Stack test notifications, reports and correspondence shall be sent to:

Stack Test Review Coordinator
Iowa DNR, Air Quality Bureau
Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-9526

Within Polk and Linn Counties, stack test notifications, reports and correspondence shall also be directed to the supervisor of the respective county air pollution program.
*567 IAC 25.1(7)"a", 567 IAC 25.1(9)*

**G31. Prevention of Air Pollution Emergency Episodes**
The permittee shall comply with the provisions of 567 IAC Chapter 26 in the prevention of excessive build-up of air contaminants during air pollution episodes, thereby preventing the occurrence of an emergency due to the effects of these contaminants on the health of persons.
*567 IAC 26.1(1)*

**G32. Contacts List**

The current address and phone number for reports and notifications to the EPA administrator is:

Iowa Compliance Officer
Air Branch
Enforcement and Compliance Assurance Division
U.S. EPA Region 7
11201 Renner Blvd.
Lenexa, KS 66219
(913) 551-7020

The current address and phone number for reports and notifications to the department or the Director is:

Chief, Air Quality Bureau
Iowa Department of Natural Resources
Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-8200

Reports or notifications to the DNR Field Offices or local programs shall be directed to the supervisor at the appropriate field office or local program. Current addresses and phone numbers are:

**Field Office 1**
909 West Main – Suite 4
Manchester, IA 52057
(563) 927-2640

**Field Office 2**
2300-15th St., SW
Mason City, IA 50401
(641) 424-4073

**Field Office 3**
1900 N. Grand Ave.
Spencer, IA 51301
(712) 262-4177

**Field Office 4**
1401 Sunnyside Lane
Atlantic, IA 50022
(712) 243-1934

**Field Office 5**
Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-0268

**Field Office 6**
1023 West Madison Street
Washington, IA 52353-1623
(319) 653-2135

**Polk County Public Works Dept.**
Air Quality Division
5885 NE 14th St.
Des Moines, IA 50313
(515) 286-3351

**Linn County Public Health**
Air Quality Branch
501 13th St., NW
Cedar Rapids, IA 52405
(319) 892-6000

# V. Appendix A – Links to NSPS/NESHAP Regulations

A. 40 CFR 60 Subpart A – *General Provisions*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.a

B. 40 CFR Part 60 Subpart Dc – Standards of Performance for *Small Industrial-Commercial-Institutional Steam Generating Units*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.d_0c

C. 40 CFR Part 60 Subpart Ga – Standards of Performance for *Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011.*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.g_0a

D. 40 CFR Part 60 Subpart VVa – Standards of Performance for *Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.vv_0a

E. 40 CFR Part 60 Subpart IIII – Standards of Performance for *Stationary Compression Ignition Internal Combustion Engines.*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.iiii

F. 40 CFR Part 63 Subpart A – *General Provisions*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.63.a

G. 40 CFR Part 63 Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for *Stationary Reciprocating Internal Combustion Engines*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.63.zzzz

H. 40 CFR Part 63 Subpart CCCCCC – National Emission Standard for Hazardous Air Pollutants for *Source Category: Gasoline Dispensing Facilities*
https://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.63.cccccc