

**STATE OF MISSISSIPPI  
AIR POLLUTION CONTROL  
TITLE V PERMIT**

**TO OPERATE AIR EMISSIONS EQUIPMENT**

**THIS CERTIFIES THAT**

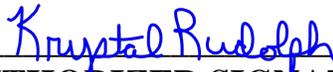
CF Industries Nitrogen LLC  
4608 Highway 49 East  
Yazoo City, Mississippi  
Yazoo County

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and conditions set forth herein. This permit is issued in accordance with Title V of the Federal Clean Air Act (42 U.S.C.A. § 7401 - 7671) and the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

**Permit Issued:** June 16, 2020

**Effective Date:** As specified herein.

**MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD**



**AUTHORIZED SIGNATURE**

**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Expires: May 31, 2025**

**Permit No.: 3020-00010**

## **TABLE OF CONTENTS**

SECTION 1. GENERAL CONDITIONS .....	3
SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES.....	13
SECTION 3. EMISSION LIMITATIONS & STANDARDS.....	16
SECTION 4. COMPLIANCE SCHEDULE .....	35
SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS .....	36
SECTION 6. ALTERNATIVE OPERATING SCENARIOS.....	49
SECTION 7. TITLE VI REQUIREMENTS .....	50

**APPENDIX A LIST OF ABBREVIATIONS USED IN THIS PERMIT**

**APPENDIX B LIST OF REGULATIONS REFERENCED IN THIS PERMIT**

**APPENDIX C COMPLIANCE ASSURANCE MONITORING PLAN**

## SECTION 1. GENERAL CONDITIONS

- 1.1 The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(a).)

- 1.2 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 this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(b).)

- 1.3 This permit and/or any part thereof 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.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(c).)

- 1.4 Prior to its expiration, this permit may be reopened in accordance with the provisions listed below.

(a) This permit shall be reopened and revised under any of the following circumstances:

- (1) Additional applicable requirements under the Federal Act become applicable to a major Title V source with a remaining permit term of 3 or more years. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is 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 has been extended.
- (2) Additional requirements (including excess emissions requirements) become applicable to an 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.
- (3) The Permit Board or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit.
- (4) The Administrator or the Permit Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue this permit shall follow the same procedures as apply

to initial permit issuance and shall only affect those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable.

- (c) Reopenings shall not be initiated before a notice of such intent is provided to the Title V source by the DEQ at least 30 days in advance of the date that the permit is to be reopened, except that the Permit Board may provide a shorter time period in the case of an emergency.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.G.)

- 1.5 The permittee shall furnish to the DEQ within a reasonable time any information the DEQ 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 shall also furnish to the DEQ copies of records required to be kept by the permittee or, for information to be confidential, the permittee shall furnish such records to DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(e).)

- 1.6 This permit does not convey any property rights of any sort, or any exclusive privilege.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(d).)

- 1.7 The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(5).)

- 1.8 The permittee shall pay to the DEQ an annual permit fee. The amount of fee shall be determined each year based on the provisions of regulated pollutants for fee purposes and the fee schedule specified in the Commission on Environmental Quality's order which shall be issued in accordance with the procedure outlined in Regulation 11 Miss. Admin. Code Pt. 2, Ch. 6.

- (a) For purposes of fee assessment and collection, the permittee shall elect for actual or allowable emissions to be used in determining the annual quantity of emissions unless the Commission determines by order that the method chosen by the applicant for calculating actual emissions fails to reasonably represent actual emissions. Actual emissions shall be calculated using emission monitoring data or direct emissions measurements for the pollutant(s); mass balance calculations such as the amounts of the pollutant(s) entering and leaving process equipment and where mass balance calculations can be supported by direct measurement of process parameters, such direct measurement data shall be supplied; published emission factors such as those relating release quantities to throughput or equipment type (e.g., air emission factors); or other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgments where such

judgments are derived from process and/or emission data which supports the estimates of maximum actual emission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A(2).)

- (b) If the Commission determines that there is not sufficient information available on a facility's emissions, the determination of the fee shall be based upon the permitted allowable emissions until such time as an adequate determination of actual emissions is made. Such determination may be made anytime within one year of the submittal of actual emissions data by the permittee.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A(2).)

- (c) If at any time within the year the Commission determines that the information submitted by the permittee on actual emissions is insufficient or incorrect, the permittee will be notified of the deficiencies and the adjusted fee schedule. Past due fees from the adjusted fee schedule will be paid on the next scheduled quarterly payment time.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D(2).)

- (d) The fee shall be due September 1 of each year. By July 1 of each year the permittee shall submit an inventory of emissions for the previous year on which the fee is to be assessed. The permittee may elect a quarterly payment method of four (4) equal payments; notification of the election of quarterly payments must be made to the DEQ by the first payment date of September 1. The permittee shall be liable for penalty as prescribed by State Law for failure to pay the fee or quarterly portion thereof by the date due.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D.)

- (e) If in disagreement with the calculation or applicability of the Title V permit fee, the permittee may petition the Commission in writing for a hearing in accordance with State Law. Any disputed portion of the fee for which a hearing has been requested will not incur any penalty or interest from and after the receipt by the Commission of the hearing petition.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.C.)

- 1.9 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.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(8).)

- 1.10 Any document required by this permit to be submitted to the DEQ shall contain a certification by a responsible official that states that, based on information and belief

formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.2.E.)

- 1.11 The permittee shall allow the DEQ, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to perform the following:
- (a) 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 this permit;
  - (b) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - (c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
  - (d) as authorized by the Federal Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C(2).)

- 1.12 Except as otherwise specified or limited herein, the permittee shall have necessary sampling ports and ease of accessibility for any new air pollution control equipment, obtained after May 8, 1970, and vented to the atmosphere.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.I(1).)

- 1.13 Except as otherwise specified or limited herein, the permittee shall provide the necessary sampling ports and ease of accessibility when deemed necessary by the Permit Board for air pollution control equipment that was in existence prior to May 8, 1970.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.I(2).)

- 1.14 Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance where such applicable requirements are included and are specifically identified in the permit or where the permit contains a determination, or summary thereof, by the Permit Board that requirements specifically identified previously are not applicable to the source.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F(1).)

- 1.15 Nothing in this permit shall alter or affect the following:
- (a) the provisions of Section 303 of the Federal 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 Federal Act.
- (d) the ability of EPA to obtain information from a source pursuant to Section 114 of the Federal Act.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F(2).)

- 1.16 The permittee shall comply with the requirement to register a Risk Management Plan if permittee's facility is required pursuant to Section 112(r) of the Act to register such a plan.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.H.)

- 1.17 Expiration of this permit terminates the permittee's right to operate unless a timely and complete renewal application has been submitted. A timely application is one which is submitted at least six (6) months prior to expiration of the Title V permit. If the permittee submits a timely and complete application, the failure to have a Title V permit is not a violation of regulations until the Permit Board takes final action on the permit application. This protection shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by the DEQ any additional information identified as being needed to process the application.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.C(2)., R. 6.4.B., and R. 6.2.A(1)(c).)

- 1.18 The permittee is authorized to make changes within their facility without requiring a permit revision (ref: Section 502(b)(10) of the Act) if:

- (a) the changes are not modifications under any provision of Title I of the Act;
- (b) the changes do not exceed the emissions allowable under this permit;
- (c) the permittee provides the Administrator and the Department with written notification in advance of the proposed changes (at least seven (7) days, or such other time frame as provided in other regulations for emergencies) and the notification includes:
  - (1) a brief description of the change(s),
  - (2) the date on which the change will occur,
  - (3) any change in emissions, and

- (4) any permit term or condition that is no longer applicable as a result of the change;
- (d) the permit shield shall not apply to any Section 502(b)(10) change.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.F(1).)

- 1.19 Should the Executive Director of the Mississippi Department of Environmental Quality declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule or, in the absence of an approved schedule, with the appropriate requirements specified in 11 Miss. Admin. Code Pt. 2, Ch. 3., "Regulations for the Prevention of Air Pollution Emergency Episodes" for the level of emergency declared.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 3.)

- 1.20 Except as otherwise provided herein, a modification of the facility may require a Permit to Construct in accordance with the provisions of Regulations 11 Miss. Admin. Code Pt. 2, Ch. 2., "Permit Regulations for the Construction and/or Operation of Air Emissions Equipment", and may require modification of this permit in accordance with Regulations 11 Miss. Admin. Code Pt. 2, Ch. 6., "Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act". Modification is defined as "[a]ny physical change in or change in the method of operation of a facility which increases the actual emissions or the potential uncontrolled emissions of any air pollutant subject to regulation under the Federal Act emitted into the atmosphere by that facility or which results in the emission of any air pollutant subject to regulation under the Federal Act into the atmosphere not previously emitted. A physical change or change in the method of operation shall not include:

- (a) routine maintenance, repair, and replacement;
- (b) use of an alternative fuel or raw material by reason of an order under Sections 2 (a) and (b) of the Federal Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;
- (c) use of an alternative fuel by reason of an order or rule under Section 125 of the Federal Act;
- (d) use of an alternative fuel or raw material by a stationary source which:
  - (1) the source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, Subpart I, or 40 CFR 51.166; or
  - (2) the source is approved to use under any permit issued under 40 CFR 52.21 or

under regulations approved pursuant to 40 CFR Part 51, Subpart I, or 40 CFR 51.166;

- (e) an increase in the hours of operation or in the production rate unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166; or
- (f) any change in ownership of the stationary source.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.C(15).)

1.21 Any change in ownership or operational control must be approved by the Permit Board.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.D(4).)

1.22 This permit is a Federally approved operating permit under Title V of the Federal Clean Air Act as amended in 1990. All terms and conditions, including any designed to limit the source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act as well as the Commission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.B(1).)

1.23 Except as otherwise specified or limited herein, the open burning of residential, commercial, institutional, or industrial solid waste, is prohibited. This prohibition does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, debris from emergency clean-up operations, and ordnance. Open burning of land-clearing debris must not use starter or auxiliary fuels which cause excessive smoke (rubber tires, plastics, etc.); must not be performed if prohibited by local ordinances; must not cause a traffic hazard; must not take place where there is a High Fire Danger Alert declared by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.

- (a) Open burning without a forced-draft air system must not occur within 500 yards of an occupied dwelling.
- (b) Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within 50 yards of an occupied dwelling.
- (c) Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.G.)

1.24 Except as otherwise specified herein, the permittee shall be subject to the following provision with respect to emergencies:

- (a) Except as otherwise specified herein, 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 noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- (b) An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in (c) following are met.
- (c) The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:
  - (1) an emergency occurred and that the permittee can identify the cause(s) of the emergency;
  - (2) the permitted facility was at the time being properly operated;
  - (3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
  - (4) the permittee submitted notice of the emergency to the DEQ within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- (d) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (e) This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.G.)

1.25 Except as otherwise specified herein, the permittee shall be subject to the following provisions with respect to upsets, startups, and shutdowns.

- (a) Upsets (as defined in 11 Miss. Admin. Code Pt. 2, R. 1.2.)

- (1) For an upset, the Commission may pursue an enforcement action for noncompliance with an emission standard or other requirement of an applicable rule, regulation, or permit. In determining whether to pursue enforcement action, and/or the appropriate enforcement action to take, the Commission may consider whether the source has demonstrated through properly signed contemporaneous operating logs or other relevant evidence the following:
    - (i) An upset occurred and that the source can identify the cause(s) of the upset;
    - (ii) The source was at the time being properly operated;
    - (iii) During the upset the source took all reasonable steps to minimize levels of emissions that exceeded the emission standard or other requirement of an applicable rule, regulation, or permit;
    - (iv) That within 5 working days of the time the upset began, the source submitted a written report to the Department describing the upset, the steps taken to mitigate excess emissions or any other noncompliance, and the corrective actions taken and;
    - (v) That as soon as practicable but no later than 24 hours of becoming aware of an upset that caused an immediate adverse impact to human health or the environment beyond the source boundary or caused a general nuisance to the public, the source provided notification to the Department.
  - (2) In any enforcement proceeding by the Commission, the source seeking to establish the occurrence of an upset has the burden of proof.
  - (3) This provision is in addition to any upset provision contained in any applicable requirement.
  - (4) These upset provisions apply only to enforcement actions by the Commission and are not intended to prohibit EPA or third party enforcement actions.
- (b) Startups and Shutdowns (as defined in 11 Miss. Admin. Code Pt. 2, R. 1.2.)
- (1) Startups and shutdowns are part of normal source operation. Emission limitations apply during startups and shutdowns unless source specific emission limitations or work practice standards for startups and shutdowns are defined by an applicable rule, regulation, or permit.
  - (2) Where the source is unable to comply with existing emission limitations established under the State Implementation Plan (SIP) and defined in this regulation, 11 Mississippi Administrative Code, Part 2, Chapter 1, the Department will consider establishing source specific emission limitations or

work practice standards for startups and shutdowns. Source specific emission limitations or work practice standards established for startups and shutdowns are subject to the requirements prescribed in 11 Miss. Admin. Code Pt. 2, R. 1.10.B(2)(a) through (e).

- (3) Where an upset as defined in Rule 1.2 occurs during startup or shutdown, see the upset requirements above.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.10.)

- 1.26 The permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M, as adopted by reference in Regulation 11 Miss Admin. Code Pt. 2, R. 1.8. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 1.8.)

## SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES

Emission Point	Description
AB-001	130 MMBtu/hr natural gas-fired Wickes Boiler (Auxiliary Boiler No. 1) – forced draft steam generator equipped with an oxygen trim system.
AB-002	184 MMBtu/hr natural gas-fired Combustion Engineering Boiler (Auxiliary Boiler No. 2) – forced draft steam generator equipped with an oxygen trim system.
AB-003	328 MMBtu/hr natural gas-fired General Electric (Model LM-2500) combustion turbine/generator set with a supplementary fired Coen burner heat recovery steam generator (Cogeneration Facility).
<b>No. 3 (Kellogg) Ammonia Plant</b> – M.W. Kellogg single train anhydrous ammonia manufacturing facility. Process is based on the catalytic steam reforming of natural gas with subsequent conversion to ammonia over a magnetite catalyst. Rated capacity of 72.37 tons/hr of ammonia production. (Associated Emission Points: AD-001, AK-007, AK-010, AB-001, AB-002, AB-003, AB-004, AD-003, AD-004, AD-005, AW-015, AW-017, AW-018, AW-019, AW-020, AW-021, and AW-006)	
AD-001	Carbon Dioxide (CO <sub>2</sub> ) Regenerator Vent
AD-003	38 MMBtu/hr natural gas-fired Kellogg Startup Heater (Zeeco Burner)
AD-004	0.20 MMBtu/hr natural gas-fired igniter for Process Ammonia Flare No. 3 (Flare Industries)
AD-005	1,030 MMBtu/hr natural gas/process purge gas-fired Primary Reformer equipped with ultra-low NO <sub>x</sub> burners on Primary and Tunnel Burners, Superheat Burners, and Auxiliary Boiler Burner (Kellogg EF1030)
AD-006	0.0077 MMBtu/hr natural gas-fired igniter for Ammonia Flare No. 1 (Tornado Combustion Technologies)
AD-007	0.20 MMBtu/hr natural gas-fired igniter for Ammonia Flare No. 2 (Flare Technologies)
<b>Nitric Acid Plants</b> – Catalytic Ammonia Oxidation Process (AOP) with water absorption to produce aqueous nitric acid.	
AE-003	No. 6 Nitric Acid Plant with emissions controlled by an extended absorption train (two towers in series) and a dual-bed selective catalytic reduction (SCR) reactor with ammonia injection grids, ammonia flow control system, and high-performance ammonia mixing technology. Rated capacity of 18.75 tons/hr of acid production.
AE-005	No. 8 Nitric Acid Plant with emissions controlled by air bleaching and single-bed SCR reactor with ammonia injection grids, ammonia flow control system, and high-performance ammonia mixing technology. Rated capacity of 47.92 tons/hr of acid production.
AE-006	No. 9 Nitric Acid Plant with emissions controlled by an extended absorption train (two towers in series) and a dual-bed SCR reactor with ammonia injection grids, ammonia flow control system, and high-performance ammonia mixing technology. Rated capacity of 29.79 tons/hr of acid production.
AE-007	No. 10 Nitric Acid Plant with emissions controlled by an extended absorption train (two towers in series) and a dual-bed SCR reactor with ammonia injection grids, ammonia flow control system, and high-performance ammonia mixing technology. Rated capacity of 29.79 tons/hr of acid production.
<b>Ammonia Nitrate Fertilizer (ANF) Plant</b> – Neutralization of nitric acid and ammonia (anhydrous and urea off-gas) to produce aqueous ammonium nitrate (AN). The aqueous product is subsequently used to produce high-density ammonium nitrate (HDAN) prills, low-density ammonium nitrate (LDAN) prills, and/or an aqueous blend of ammonium nitrate and urea. Rated capacity of 2,750 tons/day HDAN synthesis or 1,500 tons/day of LDAN.	

Emission Point	Description
AF-001	Neutralizer Condenser Scrubber which condenses the off-gases from the five ammonium nitrate neutralizers and the magnesium nitrate/ammonium nitrate synthesis process.
AF-002	No. 2 Prill Tower Scrubber which controls emissions from the No. 2 Prill Tower, No. 2 Hi-D Evaporator, No. 3 Evaporator, and the No. 4 Evaporator.
AF-003	No. 3 Prill Tower Scrubber which controls emissions from the No. 3 Prill Tower and No. 1 Hi-D Evaporator.
AF-004	Combined stack for emissions from the following processes: No. 4 ANF Finishing Train Pre-Cooler equipped with a Fly Ash Arrestor Scrubber; No. 4 ANF Finishing Train Cooler equipped with a Fly Ash Arrestor scrubber; No. 4 ANF Finishing Train Pre-Dryer controlled by the Fly Ash Arrestor scrubber following the No. 4 Finishing Train Pre-Cooler; and, No. 4 ANF Finishing Train Dryer controlled by the Fly Ash Arrestor scrubber following the No. 4 Finishing Train Cooler.
AF-005	No. 5 IGAN Plant. No. 5 Finishing Train Wet Scrubber controlling emissions from the No. 5 Finishing Train Pre-Dryer Drum, No. 5 Finishing Train Fluid Bed Cooler, and No. 5 Finishing Train Dryer Drum.
<b>Reciprocating Internal Combustion Engines and Other Miscellaneous Sources</b>	
AB-004	Emergency Generator - 1.25 MMBtu/hr (190 HP) natural gas-fired, spark ignition, 4-stroke lean-burn Waukesha emergency generator (Model Yr. 1996).
AJ-004	No. 1 Firewater Pump Engine - 1.18 MMBtu/hr (208 HP) diesel-fired, compression ignition, Cummins engine (Model Yr. 1997 with displacement <10 L/cylinder).
AJ-005	No. 2 Firewater Pump Engine - 1.18 MMBtu/hr (208 HP) diesel-fired, compression ignition, Cummins engine (Model Yr. 1997 with displacement <10 L/cylinder).
AK-003	No. 4 Water Well Pump - 1.08 MMBtu/hr (190 HP) diesel-fired, compression ignition, Caterpillar emergency engine (Model Yr. 1994 with displacement <10 L/cylinder).
AK-004	No. 6 Water Well Diesel Engine – 1.08 MMBtu/hr (190 HP) diesel-fired, compression ignition Caterpillar emergency engine (Model Yr. 1994 with displacement < 10 L/cylinder).
AK-005	Storm Water Flood Pump Engine – 1.18 MMBtu/hr (209 HP) diesel-fired, compression ignition Scania Waukesha emergency engine (Model Yr. 1969 with displacement <10 L/cylinder).
AK-007	SP-6 Process Vent which is closed during normal operation but may vent process gas during startups and shutdowns. (No. 3 Ammonia Plant)
AK-009	PIC-4 Vent closed during normal operation but may vent process gas during startups and shutdowns.
AK-010	PIC-5 Vent which is closed during normal operation but may vent process gas during startups and shutdowns. (No. 3 Ammonia Plant)
AK-011	No. 17 Water Well Generator – 1.22 MMBtu/hr (480 HP) diesel-fired, compression ignition, Caterpillar emergency engine (Model Yr. 2011 with displacement <10 L/cylinder).
AK-012	IT Backup Emergency Generator – 0.13 MMBtu/hr (49 HP) natural gas-fired, spark ignition, 4-stroke rich burn Taylor Power Systems emergency engine (Model Yr. 2013).
AK-013	Technical Services Backup Emergency Generator - 0.063 MMBtu/hr (25 HP) natural gas-fired, spark ignition, 4-stroke rich burn Olympian emergency engine (Model Yr. 1998).

Emission Point	Description
AW-006	Wash downs, AAP Slabs, and Fugitives – Raw gas blowdown is used once/week to wash down three pads in the Kellogg Plant. Methanol evaporates from this water.
AW-065	Above-ground Gasoline Dispensing Tank – 5,000-gallon gasoline storage tank
AW-125	Port Gasoline Tank – 560-gallon gasoline storage tank
<b>Cooling Towers</b> – These cooling towers are associated with the No. 3 Kellogg Ammonia Plant	
AW-015	No. 3 Cooling Tower
AW-017	No. 4 Cooling Tower
AW-018	No. 7 Cooling Tower
AW-019	No. 8 Cooling Tower
AW-020	No. 9 Cooling Tower
AW-021	No. 10 Cooling Tower
<b>Urea Plant</b> – Anhydrous ammonia and carbon dioxide are reacted to produce aqueous urea solution which is blended to produce liquid fertilizer. Rated Capacity: 26.04 tons/hr (100% urea). There are no emission points associated with this plant because the plant does not emit any regulated pollutants.	

### SECTION 3. EMISSION LIMITATIONS & STANDARDS

#### A. Facility-Wide Emission Limitations & Standards

3.A.1 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty (40) percent opacity subject to the exceptions provided in (a) & (b).

(a) Startup operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one hour and not to exceed three (3) startups per stack in any twenty-four (24) hour period.

(b) Emissions resulting from soot blowing operations shall be permitted provided such emissions do not exceed 60 percent opacity, and provided further that the aggregate duration of such emissions during any twenty-four (24) hour period does not exceed ten (10) minutes per billion BTU gross heating value of fuel in any one hour.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.A.)

3.A.2 Except as otherwise specified or limited herein, the permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of 40% opacity, equivalent to that provided in Paragraph 3.A.1. This shall not apply to vision obscuration caused by uncombined water droplets.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.B.)

**B. Emission Point Specific Emission Limitations & Standards**

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
AB-001 AB-002 AD-003 AD-005	40 CFR 63, Subpart DDDDD  NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters  40 CFR 63.7480, 63.7485, 63.7490(a)(1) and (d), 63.7499(l) and (o) and 63.7500(c) and (e), Subpart DDDDD	3.B.1	HAP	Applicability
	40 CFR 63.7500(a)(3) and (f), and 63.7505(a), Subpart DDDDD	3.B.2		Operating requirement
AD-003	40 CFR 63.7575, Subpart DDDDD	3.B.3	HAP	Annual capacity factor ≤ 10 percent
AB-001	Permit to Construct issued September 12, 1995	3.B.4	NO <sub>x</sub>	71.5 lbs/hr and 313.2 tpy
AB-002	Permit to Construct issued September 16, 1999	3.B.5	Operating Restriction	1) The boiler shall be operated at a standby firing rate not to exceed 6,000 scfh when the Cogeneration Facility and Auxiliary Boiler No. 1 are online.  2) The boiler shall <b>NOT</b> be operated at a rate exceeding the capacity of Auxiliary Boiler No. 1 (i.e., 127.5 Mscfh) when the Cogeneration Facility is online and Auxiliary Boiler No. 1 is down.  3) The boiler may be operated at design capacity when the Cogeneration Facility is down.
AB-003	Permit to Construct issued September 12, 1995, and  40 CFR 60, Subpart GG  Standards of Performance for Stationary Gas Turbines  40 CFR 60.332(a) and 60.333(a) and (b), Subpart GG	3.B.6	NO <sub>x</sub>	263 ppmvd at 15% O <sub>2</sub> not to exceed 243.3 lbs/hr and 1,066.3 tpy
		3.B.7	SO <sub>2</sub>	150 ppmvd at 15% O <sub>2</sub> , not to exceed 9.1 lbs/hr and 40 tpy
		3.B.8	Fuel	≤ 0.8 percent sulfur by weight
AB-003	40 CFR 63, Subpart YYYY  NESHAP for Stationary Combustion Turbines  40 CFR 63.6080, 63.6085(a) and (b), and 63.6090(a)(1) and (b)(4),	3.B.9	HAP	Applicability

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
	Subpart YYYY			
	40 CFR 60, Subpart Dc  Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units  40 CFR 60.40c(a), Subpart Dc	3.B.10	PM SO <sub>2</sub>	Applicability
AB-001 AB-002 AB-003	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).	3.B.11	PM (filterable only)	$E = 0.8808 * I^{-0.1667}$
AB-001 AB-002	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).	3.B.12	SO <sub>2</sub>	4.8 lbs/MMBtu
	Title V Operating Permit issued December 15, 2006	3.B.13	Fuel	Natural gas only
<b>No. 3 (Kellogg) Ammonia Plant</b>				
AD-003 AD-005	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).	3.B.11	PM (filterable only)	$E = 0.8808 * I^{-0.1667}$
	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).	3.B.12	SO <sub>2</sub>	4.8 lbs/MMBtu
AD-003	Title V Operating Permit issued January 6, 2000	3.B.13	Fuel	Natural gas only
AD-004	Title V Operating Permit issued January 6, 2000	3.B.14	Fuel	Natural gas only for pilot light. Flare burns off-gas (primarily ammonia) during a flaring event.
AD-004 AD-006 AD-007	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).	3.B.15	PM (filterable only)	0.6 lbs/MMBtu
AD-005	Title V Operating Permit issued December 15, 2006	3.B.16	Fuel	Natural gas and process purge gas only
	Permit to Construct issued September 27, 2012, and	3.B.17	NO <sub>x</sub>	173.31 lbs/hr and 759.10 tpy

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
	modified September 16, 2016	3.B.18	Ammonia Production	≤ 620,500 tons per year
		3.B.19	Heat Input Restriction	≤ 9,022,800 MMBtu per year
<b>Nitric Acid Plants</b>				
AE-003	Permits to Construct issued June 23, 2014, and  U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011)	3.B.20	NO <sub>x</sub>	<u>Short Term: 3-hour rolling average:</u> 1.0 lb/ton of 100% acid produced, not to exceed 18.75 lbs/hr
				<u>Long Term: 365-day rolling average:</u> 0.6 lbs/ton of 100% acid produced, not to exceed 49.28 tpy
	40 CFR 60, Subpart G  Standards of Performance for Nitric Acid Plants  40 CFR 60.72(a)(1) and (2), Subpart G	3.B.21	NO <sub>x</sub>	3.0 lbs/ton of 100% acid produced (3-hour average)  NOTE: This limit has been superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).
			Opacity	≤ 10%
AE-005	Permits to Construct issued June 23, 2014, and  U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011)	3.B.20	NO <sub>x</sub>	<u>Short Term: 3-hour rolling average:</u> 1.0 lb/ton of 100% acid produced, not to exceed 47.92 lbs/hr
				<u>Long Term: 365-day rolling average:</u> 0.6 lbs/ton of 100% acid produced, not to exceed 125.93 tpy
	40 CFR 60, Subpart G  Standards of Performance for Nitric Acid Plants  40 CFR 60.72(a)(1) and (2), Subpart G	3.B.21	NO <sub>x</sub>	3.0 lbs/ton of 100% acid produced (3-hour average)  NOTE: This limit has been superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).
			Opacity	≤ 10%
AE-006	Permits to Construct issued September 27, 2012, and  U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011)	3.B.20	NO <sub>x</sub>	<u>Short Term: 3-hour rolling average:</u> 1.0 lbs/ton of 100% acid produced, not to exceed 29.79 lbs/hr  <u>Long Term: 365-day rolling average:</u> 0.6 lbs/ton of 100% acid produced, not to exceed 78.29 tpy

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
	40 CFR 60, Subpart G  Standards of Performance for Nitric Acid Plants  40 CFR 60.72(a)(1) and (2), Subpart G	3.B.21	NO <sub>x</sub>	3.0 lbs/ton of 100% acid produced (3-hour average)  NOTE: This limit has been superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).
			Opacity	≤ 10%
AE-007	Permits to Construct issued September 27, 2012, and  U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011)	3.B.20	NO <sub>x</sub>	<u>Short Term: 3-hour rolling average:</u> 1.0 lb/ton of 100% acid produced, not to exceed 29.79 lbs/hr  <u>Long Term: 365-day rolling average:</u> 0.6 lbs/ton of 100% acid produced, not to exceed 78.29 tpy
			NO <sub>x</sub>	3.0 lbs/ton of 100% acid produced (3-hour average)  NOTE: This limit has been superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).
	40 CFR 60, Subpart G  Standards of Performance for Nitric Acid Plants  40 CFR 60.72(a)(1) and (2), Subpart G	3.B.21	NO <sub>x</sub>	3.0 lbs/ton of 100% acid produced (3-hour average)  NOTE: This limit has been superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).
			Opacity	≤ 10%
<b>Ammonium Nitrate Fertilizer (ANF) Plant</b>				
AF-001 AF-002 AF-003 AF-004 AF-005	11 Miss. Admin. Code Pt. 2, R. 1.3.F(1).	3.B.22	PM (filterable only)	$E=4.1p^{0.67}$
AF-001	Permit to Construct issued February 26, 1991, and modified on December 29, 1992, May 24, 1994, and October 11, 1994	3.B.23	PM/PM <sub>10</sub> (filterable only)	12.4 lbs/hr and 54.3 tpy
AF-002	PSD Construction Permit issued September 21, 2004	3.B.24	PM/PM <sub>10</sub> (filterable only)	34.0 lbs/hr and 148.9 tpy
AF-003	PSD Construction Permit issued January 11, 2006	3.B.25	PM/PM <sub>10</sub> (filterable only)	17.0 lbs/hr and 74.46 tpy
AF-004	Permit to Construct issued February 2, 2015 ( <b>PSD Avoidance Limits</b> )	3.B.26	PM (filterable only)	30.59 lbs/hr and 133.98 tpy

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
AF-005	Permit to Construct issued February 2, 2015 ( <b>PSD Avoidance Limits</b> )	3.B.27	PM (filterable only)	17.17 lbs/hr and 75.20 tpy
			PM <sub>10</sub> (filterable + condensable)	10.36 lbs/hr and 31.23 tpy
			PM <sub>2.5</sub> (filterable + condensable)	7.13 lbs/hr and 31.23 tpy
			Scrubber Operating Requirements	Differential pressure drop > 20" H <sub>2</sub> O Recirculating pump amps > 5 amps
<b>Reciprocating Internal Combustion Engines and Other Miscellaneous Sources</b>				
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-011 AK-012 AK-013	40 CFR 63, Subpart ZZZZ  NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)  40 CFR 63.6580, 63.6585(a) and (b), 63.6590(a)(1)(ii), (a)(2)(ii), (c)(4), and (c)(7), and 63.6605(a) and (b), Subpart ZZZZ	3.B.28	HAP	Applicability
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-013	40 CFR 63.6640(f)(1)-(3), Subpart ZZZZ	3.B.29		Operating requirements
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-011 AK-012 AK-013	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).	3.B.15	PM (filterable only)	0.6 lbs/MMBTU
AB-004	Title V Operating Permit issued December 15, 2006	3.B.13	Fuel	Natural gas only
AK-011	40 CFR 60, Subpart III  Standards of Performance for Stationary Compression Ignition Internal Combustion Engines  40 CFR 60.4200(a)(2)(i), Subpart	3.B.30	NMHC+NO <sub>x</sub> , PM (filterable only), CO, SO <sub>2</sub>	Applicability

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
	III			
	40 CFR 60.4205(b), 60.4202(a)(2), 60.4206, Subpart III  and 40 CFR 89.112(a), and 89.113(a), Subpart B	3.B.31	NMHC+NO <sub>x</sub>  CO  PM (filterable only)  Opacity	4.0 g/kW-hr  3.5 g/kW-hr  0.2 g/kW-hr  Limits for acceleration and lugging modes. See condition.
	40 CFR 60.4207(b), Subpart III  and 40 CFR 80.510(b), Subpart I	3.B.32	SO <sub>2</sub>  (Diesel Fuel Requirements)	Max sulfur content of diesel fuel ≤15 ppm  Min. cetane index of 40 or max aromatic content of 35 volume percent.
	40 CFR 60.4211(a)(1)-(3) and (c), Subpart III	3.B.33	NMHC+NO <sub>x</sub> , PM (filterable only), CO, SO <sub>2</sub>	Certified engine requirements
	40 CFR 60.4211(f)(1)-(3), Subpart III	3.B.34		Operating requirements
AK-012	40 CFR 60, Subpart JJJJ  Standards of Performance for Stationary Spark Ignition Internal Combustion Engines  40 CFR 60.4230(a)(4)(iv), Subpart JJJJ	3.B.35	NO <sub>x</sub> , CO, VOC	Applicability
AK-012	40 CFR 60.4233(d), 60.4234, and Table 1, Subpart JJJJ	3.B.36	NO <sub>x</sub> + HC  CO	10 g/HP-hr  387 g/HP-hr
	40 CFR 60.4243(b)(1), Subpart JJJJ	3.B.37	NO <sub>x</sub> , CO, VOC	Purchase, operate, and maintain certified engine
	40 CFR 60.4243(d)(1)-(3), Subpart JJJJ	3.B.38		Operating requirements

3.B.1 Emission Points AB-001, AB-002, AD-003, and AD-005 are subject to and shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD.

For purposes of Subpart DDDDD, Emission Points AB-001 and AB-002 are considered existing boilers that are in the “units designed to burn gas 1 fuels” category. Emission Point AD-003 is considered an existing process heater that is in the “limited use boilers and process heaters” category. Emission Point AD-005 is considered an existing process heater

that is in the “units designed to burn gas 1 fuels” category. Emission Points AB-001, AB-002, AD-003, and AD-005 are not subject to the emission limits in Table 2 or the operating limits in Table 4 of Subpart DDDDD.

(Ref.: 40 CFR 63.7480, 63.7485, 63.7490(a)(1) and (d), 63.7499(l) and (o), and 63.7500(c) and (e), Subpart DDDDD)

- 3.B.2 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall operate and maintain each unit in a manner consistent with safety and good air pollution control practices for minimizing emissions. The Subpart DDDDD work practice standards in Section 3.D of this permit apply at all times an affected unit is operating, except during periods of startup and shutdown.

(Ref.: 40 CFR 63.7500(a)(3) and (f) and 63.7505(a), Subpart DDDDD)

- 3.B.3 Emission Point AD-003 shall be limited to having an annual capacity factor of less than or equal to 10 percent. As such, the unit will be considered a limited use process heater as defined in Subpart DDDDD.

(Ref.: 40 CFR 63.7575, Subpart DDDDD)

- 3.B.4 For Emission Point AB-001, the permittee is limited to a Nitrogen Oxides (NO<sub>x</sub>) emission rate not to exceed 71.5 lb/hr and 313.2 tpy.

(Ref.: Permit to Construct issued September 12, 1995)

- 3.B.5 For Emission Point AB-002, the permittee shall comply with the following operating restrictions:

- (a) The boiler shall be operated at a standby firing rate not to exceed 6,000 scfh when the Cogeneration Facility (Emission Point AB-003) and Auxiliary Boiler No. 1 (Emission Point AB-001) are online.
- (b) The boiler shall be operated at a rate not to exceed the capacity of Emission Point AB-001 (i.e., 127.5 Mscfh) when the Cogeneration Facility is online and Emission Point AA-001 is offline.
- (c) The boiler may be operated at its design capacity when the Cogeneration Facility is down.

(Ref.: Permit to Construct issued September 16, 1999)

- 3.B.6 The combustion turbine associated with Emission Point AB-003 is subject to and shall comply with all applicable requirements of the Standards of Performance for Stationary Gas Turbines, 40 CFR 60, Subpart GG. The combustion turbine shall be limited to a NO<sub>x</sub> emission rate of 263 ppmvd at 15% Oxygen (O<sub>2</sub>) on a dry basis. Total mass emissions from the combustion turbine and Coen burner heat recovery steam generator shall not to exceed 243.3 lb/hr and 1,066.3 tpy.

(Ref.: Permit to Construct issued September 12, 1995, and 40 CFR 60.332(a), Subpart GG)

- 3.B.7 For Emission Point AB-003, the combustion turbine shall be limited to a Sulfur Dioxide (SO<sub>2</sub>) emission rate of 150 ppmvd at 15% O<sub>2</sub> on a dry basis. Total mass emissions from the combustion turbine and Coen burner heat recovery steam generator shall not exceed 9.1 lb/hr and 40 tpy.

(Ref.: Permit to Construct issued September 12, 1995, and 40 CFR 60.333(a), Subpart GG)

- 3.B.8 For Emission Point AB-003, the permittee shall not burn any fuel containing sulfur in excess of 0.8 percent by weight (800 ppmw) in the stationary gas turbine.

(Ref.: Permit to Construct issued September 12, 1995, and 40 CFR 60.333(b), Subpart GG)

- 3.B.9 Emission Point AB-003 is subject to and shall comply with the applicable requirements of the NESHAP for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY. For purposes of this subpart, the combustion turbine is considered an existing stationary combustion turbine and per 63.6090(b)(4), the affected unit is not required to meet any requirements of Subpart YYYY.

(Ref.: 40 CFR 63.6080, 63.6085(a) and (b), and 63.6090(a)(1) and (b)(4), Subpart YYYY)

- 3.B.10 The Coen burner heat recovery steam generator associated with Emission Point AB-003 is subject to the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc. Since the unit combusts natural gas only, there are no emission standards to meet.

(Ref.: 40 CFR 60.40c(a), Subpart Dc)

- 3.B.11 For Emission Points AB-001, AB-002, AB-003, AD-003, and AD-005 the permittee shall not have particulate emissions from fossil fuel burning installations of greater than 10 million BTU per hour heat input that exceeds the emission rate as determined by the relationship:

$$E = 0.8808 * I^{0.1667}$$

Where E is the emission rate in pounds per million BTU per hour heat input and I is the heat input in millions of BTU per hour.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).)

- 3.B.12 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall not discharge SO<sub>2</sub> from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer in excess of 4.8 pounds (measured as sulfur dioxide) per million BTU heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).)

- 3.B.13 For Emission Points AB-001, AB-002, AB-004 and AD-003 the permittee shall not fire any fuel other than natural gas.

(Ref.: Title V Operating Permit issued December 15, 2006)

- 3.B.14 For Emission Point AD-004, the pilot light for the flare shall be fired with natural gas. The flare shall burn off-gas (primarily ammonia) during a flaring event.  
(Ref.: Title V Operating Permit issued January 6, 2000)
- 3.B.15 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-011, AK-012, AK-013, AD-004, AD-006, and AD-007, the maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input.  
(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).)
- 3.B.16 For Emission Point AD-005, the permittee shall not fire any fuels other than natural gas and process purge gas.  
(Ref.: Title V Operating Permit issued December 15, 2006)
- 3.B.17 For Emission Point AD-005, the permittee shall limit emissions of NO<sub>x</sub> not to exceed 173.31 lb/hr and 759.10 tpy.  
(Ref.: Construction Permit issued September 27, 2012, and modified September 16, 2016)
- 3.B.18 For Emission Point AD-005, the permittee shall limit production to no more than 620,500 tons per year of ammonia.  
(Ref.: Construction Permit issued September 27, 2012, and modified September 16, 2016)
- 3.B.19 For Emission Point AD-005, the permittee shall limit the total heat input to the Primary Reformer to no more than 9,022,800 MMBtu per year, which shall include heat input from the Primary, Tunnel, and Superheater burners and from the Auxiliary Boiler.  
(Ref.: Construction Permit issued September 27, 2012, and modified September 16, 2016)
- 3.B.20 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall not discharge any gases containing NO<sub>x</sub> in excess of 1.0 pound per ton of acid produced on a 3-hour rolling average and 0.6 pounds per ton of acid produced on a 365-day rolling average. These limits shall apply at all times except during periods of startup, shutdown, or malfunction. The acid production rate is expressed as 100% nitric acid. The permittee shall also comply with the corresponding NO<sub>x</sub> lb/hr and tpy emission limits for each emission point listed in the table below. Compliance with the short and long-term limits will be calculated in accordance with the CEMS/CAM Plan contained in Appendix C.

The following NO<sub>x</sub> emission limits were established pursuant to the U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011) and cannot be relaxed without the approval of EPA and MDEQ.

Emission Point	Nitric Acid Plant	NO <sub>x</sub> Emission Limit	
		lb/hr	tpy

		(3-hr average)	(365-day total)
AE-003	AOP-6	18.75	49.28
AE-005	AOP-8	47.92	125.93
AE-006	AOP-9	29.79	78.29
AE-007	AOP-10	29.79	78.29

(Ref.: Permits to Construct issued September 27, 2012, and June 23, 2014, and U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011))

3.B.21 Emission Points AE-003, AE-005, AE-006, and AE-007 are subject to the Standards of Performance for Nitric Acid Plants, 40 CFR 60, Subpart G. As such, the permittee shall not discharge any gases according to the following restrictions:

- (a) Emissions of NO<sub>x</sub> shall not be in excess of 3.0 pounds per ton of acid produced determined on a 3-hour average and with acid production being expressed as 100% nitric acid.
- (b) Opacity shall not exceed 10 percent except during periods of startup, shutdown, or malfunction.

The NO<sub>x</sub> emission limit in paragraph (a) is superseded by the short-term NO<sub>x</sub> emission limit of 1.0 lb/ton in Condition 3.B.21.

(Ref.: 40 CFR 60.72(a)(1) and (2), Subpart G)

3.B.22 For Emission Points AF-001, AF-002, AF-003, AF-004, and AF-005, the permittee shall not cause, permit, or allow the emission of particulate matter in total quantities in any one hour from any manufacturing process, which includes associated stacks, vents, outlets, or combination thereof, to exceed the amount determined by the relationship

$$E=4.1p^{0.67}$$

where E is the emission rate in pounds per hour and p is the process weight input rate in tons per hour. Conveyor discharge of coarse solid matter may be allowed if no nuisance is created beyond the property boundary where the discharge occurs.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.F(1).)

3.B.23 For Emission Point AF-001, the permittee shall be limited to a Particulate Matter (PM)/PM<sub>10</sub> (filterable only) emission rate of 12.4 lb/hr and 54.3 tpy.

(Ref.: Permit to Construct issued February 26, 1991, and modified on December 29, 1992, May 24, 1994, and October 11, 1994)

3.B.24 For Emission Point AF-002, the permittee shall be limited to a PM/PM<sub>10</sub> (filterable only) emission rate of 34.0 lb/hr and 148.9 tpy.

(Ref.: PSD Construction Permit issued September 21, 2004)

- 3.B.25 For Emission Point AF-003, the permittee shall be limited to a PM/PM<sub>10</sub> (filterable only) emission rate of 17.0 lb/hr and 74.46 tpy.

(Ref.: PSD Construction Permit issued January 11, 2006)

- 3.B.26 For Emission Point AF-004, the permittee shall be limited to a PM/PM<sub>10</sub> (filterable only) emission rate of 30.59 lb/hr and 133.98 tpy.

(Ref.: PSD Construction Permit issued January 11, 2006)

- 3.B.27 For Emission Point AF-005, the permittee shall be limited to a PM (filterable only) emission rate of 17.17 lb/hr and 75.20 tpy; PM<sub>10</sub> (filterable + condensable) emission rate of 10.36 lb/hr and 31.23 tpy; and PM<sub>2.5</sub> (filterable + condensable) emission rate of 7.13 lb/hr and 31.23 tpy. In addition to the limits identified above, the permittee shall be limited to operating the scrubber such that the differential pressure drop remains in excess of 20" H<sub>2</sub>O and the recirculating pump operates in excess of 5 amps.

(Ref.: Construction Permit issued February 2, 2015)

- 3.B.28 Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-011, AK-012, and AK-013 are subject to and shall comply with the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63, Subpart ZZZZ.

For purposes of this subpart, Emission Points AB-004 and AK-013 are considered existing, emergency, spark ignition (SI) stationary RICE at a major source of HAP emissions and shall comply with all applicable requirements of Subpart ZZZZ.

Emission Points AJ-004, AJ-005, AK-003, AK-004, and AK-005 are considered existing, emergency, compression ignition (CI) stationary RICE at a major source of HAP emissions and shall comply with all applicable requirements of Subpart ZZZZ.

Emission Point AK-011 is considered a new, emergency CI stationary RICE at a major source of HAP emissions. As such, the permittee shall comply with Subpart ZZZZ by complying with the applicable requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart III.

Emission Point AK-012 is considered a new, emergency SI stationary RICE at a major source of HAP emissions. As such, the permittee shall comply with Subpart ZZZZ by complying with the applicable requirements of the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJ.

At all times, each engine shall be in compliance with the applicable requirements of Subpart ZZZZ and the permittee shall operate and maintain the engines in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the MDEQ 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.

(Ref.: 40 CFR 63.6580, 63.6585(a) and (b), 63.6590(a)(1)(ii), (a)(2)(ii), (c)(4), and (c)(7), and 63.6605(a) and (b), Subpart ZZZZ)

3.B.29 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, and AK-013, the engines shall be considered emergency stationary RICE under Subpart ZZZZ provided the engines only operate in an emergency, during maintenance and testing, and during non-emergency situations for 50 hours per year as described in (c) below. If the permittee does not operate an engine according to the requirements in (a)-(c) below, the engine will not be considered an emergency engine under Subpart ZZZZ and must meet all requirements for non-emergency engines.

- (a) There is no limit on the use of an engine during an emergency situation.
- (b) The permittee may operate an engine for maintenance checks and readiness testing for a maximum of 100 hours per calendar year provided the tests are recommended by federal, state, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or insurance company associated with an engine. The permittee may petition the MDEQ for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating the federal, state, or local standards require maintenance testing of an engine beyond 100 hours per calendar year.
- (c) Emergency engines may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (b). Except as provided in 63.6640(f)(4)(i) and (ii), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 63.6640(f)(1)-(3), Subpart ZZZZ)

3.B.30 Emission Point AK-011 is subject to and shall comply with all applicable requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart III.

(Ref.: 40 CFR 60.4200(a)(2)(i))

3.B.31 For Emission Point AK-011, the permittee shall operate and maintain the engine such that it achieves the following emission standards for the life of the engine:

- (a) Non-methane hydrocarbon and nitrogen oxides (NMHC + NO<sub>x</sub>) ≤ 4.0 g/kW-hr
- (b) Carbon monoxide (CO) ≤ 3.5 g/kW-hr
- (c) PM ≤ 0.2 g/kW-hr

- (d) Opacity shall not exceed:
  - (i) 20 percent during the acceleration mode
  - (ii) 15 percent during the lugging mode, and
  - (iii) 50 percent during the peaks in either the acceleration or lugging modes.

(Ref.: 60.4205(b), 60.4202(a)(2), and 60.4206, Subpart III and 40 CFR 89.112(a) and 89.113(b), Subpart B)

3.B.32 For Emission Point AK-011, the permittee shall use diesel fuel that meets the following per gallon standards:

- (a) Maximum sulfur content of  $\leq 15$  ppm, and
- (b) Minimum cetane index of 40 or a maximum aromatic content of 35 volume percent

(Ref.: 40 CFR 60.4207(b), Subpart III and 40 CFR 80.510(b), Subpart I)

3.B.33 For Emission Point AK-011, the permittee shall comply with the emission standards contained in 40 CFR 89 by purchasing, installing, operating, and maintaining an engine certified to meet the emission standards. The permittee shall operate and maintain the engine in accordance with the manufacturer's emission-related written instructions and can only change the emission-related settings that are permitted by the manufacturer.

(40 CFR 60.4211(a)(1)-(3) and (c), Subpart III)

3.B.34 For Emission Point AK-011, the engine shall be considered an emergency stationary engine under Subpart III provided the engine only operates in an emergency, during maintenance and testing, and during non-emergency situations for 50 hours per year as described in (c) below. If the permittee does not operate the engine according to the requirements in (a)-(c) below, the engine will not be considered an emergency engine under Subpart III and must meet all requirements for non-emergency engines.

- (a) There is no limit on the use of the engine during an emergency situation.
- (b) The permittee may operate the engine for maintenance checks and readiness testing for a maximum of 100 hours per calendar year provided the tests are recommended by federal, state, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or insurance company associated with an engine. The permittee may petition the MDEQ for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating the federal, state, or local standards require maintenance testing of an engine beyond 100 hours per calendar year.
- (c) The emergency engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (b). Except as provided in 60.4211(f)(3)(i), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency

demand response, or to generate income for a facility to an electric grid or otherwise supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 60.4211(f)(1)-(3), Subpart IIII)

- 3.B.35 Emission Point AK-012 is subject to and shall comply with all applicable requirements of the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ.

(Ref.: 40 CFR 60.4230(a)(4)(iv), Subpart JJJJ)

- 3.B.36 For Emission Point AK-012, the permittee shall operate and maintain the engine such that it meets the following standards over the entire life of the engine.

(a)  $\text{NO}_x + \text{HC} \leq 10 \text{ g/HP-hr}$

(b)  $\text{CO} \leq 387 \text{ g/HP-hr}$

(Ref.: 40 CFR 60.4233(d), 60.4234, and Table 1, Subpart JJJJ)

- 3.B.37 For Emission Point AK-012, the permittee shall demonstrate compliance with the emission standards by purchasing a certified engine and operating and maintaining the certified engine according to the manufacturer's emission-related written instructions. The permittee may adjust engine settings provided the adjustments are consistent with the manufacturer's instructions.

(Ref.: 40 CFR 60.4243(b)(1), Subpart JJJJ)

- 3.B.38 For Emission Point AK-012, the engine shall be considered an emergency stationary engine under Subpart JJJJ provided the engine only operates in an emergency, during maintenance and testing, and during non-emergency situations for 50 hours per year as described in (c) below. If the permittee does not operate the engine according to the requirements in (a)-(c) below, the engine will not be considered an emergency engine under Subpart JJJJ and must meet all requirements for non-emergency engines.

(a) There is no limit on the use of the engine during an emergency situation.

(b) The permittee may operate the engine for maintenance checks and readiness testing for a maximum of 100 hours per calendar year provided the tests are recommended by federal, state, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or insurance company associated with an engine. The permittee may petition the MDEQ for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating the federal, state, or local standards require maintenance testing of an engine beyond 100 hours per calendar year.

(c) The emergency engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are

counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (b). Except as provided in 60.4243(d)(3)(i), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 60.4243(d)(1)-(3), Subpart JJJJ)

C. Insignificant and Trivial Activity Emission Limitations & Standards

Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).	3.C.1	PM	0.6 lbs/MMBTU
11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).	3.C.2	SO <sub>2</sub>	4.8 lbs/MMBTU

3.C.1 The maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).)

3.C.2 The maximum discharge of sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer shall not exceed 4.8 pounds (measured as sulfur dioxide) per million BTU heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).)

D. Work Practice Standards

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limit/Standard
AB-001 AB-002 AD-003 AD-005	40 CFR 63.7500(c), 63.7515(d), 63.7540(a)(12), and (13), Subpart DDDDD	3.D.1	HAP	Tune-up frequency
	40 CFR 63.7540(a)(10)(i)-(vi), Subpart DDDDD	3.D.2		Tune-up requirements
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-013	40 CFR 63.6602 and Table 2c, Subpart ZZZZ	3.D.3	HAP	Maintenance requirements
	40 CFR 63.6625(e) and (h), 63.6640(a), and Table 6, Subpart ZZZZ	3.D.4		Operating requirements

3.D.1 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall conduct a tune-up on each unit every five (5) years since Emission Points AB-001, AB-002, and AD-005 are equipped with a continuous oxygen trim system and Emission Point AD-003 is considered a limited use process heater. Each subsequent tune-up must be completed no more than 61 months after the previous tune-up. The burner inspection may be delayed until the next scheduled or unscheduled shutdown, but the burner must be inspected once every 72 months. For each unit with a continuous oxygen trim system, the permittee shall set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up. If any unit is not operating on the required date for a tune-up, the permittee shall conduct the required tune-up within 30 calendar days of startup.

(Ref.: 40 CFR 63.7500(c), 63.7515(d), and 63.7540(a)(12) and (13), Subpart DDDDD)

3.D.2 For Emission Points AB-001, AB-002, AD-003, and AD-005, each tune-up shall consist of the following:

- (a) As applicable, inspect the burner, and clean or replace any components of the burner, as necessary (the burner inspection may be completed any time prior to the tune-up or can be delayed until the next scheduled unit shutdown).
- (b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
- (c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (inspection may be delayed until the next scheduled unit shutdown).
- (d) Optimize total emission of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO<sub>x</sub> requirement to which the unit is subject.

- (e) Measure the concentrations from the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
- (f) Maintain on-site and submit, if requested by MDEQ, a report containing the information in (1) through (3) below:
  - (1) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater.
  - (2) A description of any corrective actions taken as part of the tune-up.
  - (3) For Emission Point AD-005, the type and amount of fuel fired over the previous 12 months prior to the tune-up.

(Ref.: 63.7540(a)(10)(i)-(vi), Subpart DDDDD)

3.D.3 For Emission Points AB-004 and AK-013 (both SI RICE) and Emission Points AJ-004, AJ-005, AK-003, AK-004, and AK-005 (all CI RICE), the permittee shall comply with the following requirements:

- (a) Change oil and filter every 500 hours of operation or annually, whichever comes first, or perform an oil analysis at the same frequency in order to extend the oil change requirement in accordance with 63.6625(i) or (j).
- (b) Inspect air cleaner (CI RICE) or spark plugs (SI RICE) every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
- (c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If an engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practices according to the schedule in (a)-(c) above, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated.

(Ref.: 40 CFR 63.6602 and Table 2c, Subpart ZZZZ)

3.D.4 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, and AK-005, and AK-013, the permittee shall operate and maintain the engines according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practices for minimizing emissions. The permittee shall minimize each engine's time spent at idle during startup and minimize each

engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

(Ref.: 40 CFR 63.6625(e) and (h), 63.6640(a), and Table 6, Subpart ZZZZ)

#### SECTION 4. COMPLIANCE SCHEDULE

- 4.1 Unless otherwise specified herein, the permittee shall be in compliance with all requirements contained herein upon issuance of this permit.
- 4.2 Except as otherwise specified herein, the permittee shall submit to the Permit Board and to the Administrator of EPA Region IV a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, by January 31 for the preceding calendar year. Each compliance certification shall include the following:
- (a) the identification of each term or condition of the permit that is the basis of the certification;
  - (b) the compliance status;
  - (c) whether compliance was continuous or intermittent;
  - (d) the method(s) used for determining the compliance status of the source, currently and over the applicable reporting period;
  - (e) such other facts as may be specified as pertinent in specific conditions elsewhere in this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C(5)(a), (c), & (d).)

## SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

### A. General Monitoring, Recordkeeping and Reporting Requirements

5.A.1 The permittee shall install, maintain, and operate equipment and/or institute procedures as necessary to perform the monitoring and recordkeeping specified below.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).)

5.A.2 In addition to the recordkeeping specified below, the permittee shall include with all records of required monitoring information the following:

- (a) the date, place as defined in the permit, and time of sampling or measurements;
- (b) the date(s) 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 existing at the time of sampling or measurement.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(b)(1).)

5.A.3 Except where a longer duration is specified in an applicable requirement, the permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(b)(2).)

5.A.4 Except as otherwise specified herein, the permittee shall submit reports of any required monitoring by July 31 and January 31 for the preceding six-month period. All instances of deviations from permit requirements must be clearly identified in such reports and all required reports must be certified by a responsible official consistent with 11 Miss. Admin. Code Pt. 2, R. 6.2.E.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.A.5 Except as otherwise specified herein, the permittee shall report all deviations from permit requirements, including those attributable to upsets, the probable cause of such deviations,

and any corrective actions or preventive measures taken. Said report shall be made within five (5) days of the time the deviation began.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(2).)

- 5.A.6 Except as otherwise specified herein, the permittee shall perform emissions sampling and analysis in accordance with EPA Test Methods and with any continuous emission monitoring requirements, if applicable. All test methods shall be those versions or their equivalents approved by the DEQ and the EPA.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).)

- 5.A.7 The permittee shall maintain records of any alterations, additions, or changes in equipment or operation.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).)

**B. Specific Monitoring and Recordkeeping Requirements**

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement
Facility-wide	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(3).	5.B.1	Control equipment	Regular maintenance as necessary and maintain a log of malfunctions and downtime.
AB-001	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).	5.B.2	NO <sub>x</sub>	Biennial stack test
AB-001 AB-002 AB-003	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).	5.B.3	Fuel	Monitor and record fuel use
AB-003	40 CFR 60.334(c), Subpart GG	5.B.4	NO <sub>x</sub>	Biennial stack test
	40 CFR 60.334(h)(3), Subpart GG	5.B.5	Fuel	Fuel documentation
	40 CFR 60.48c(g) and (i), Subpart Dc	5.B.6	Fuel	Monitor fuel usage
AD-003	40 CFR 63.7525(k), Subpart DDDDD	5.B.7	HAP	Document fuel usage
AB-001 AB-002 AD-003 AD-005	40 CFR 63.7555(a) and 63.7560, Subpart DDDDD	5.B.8		Recordkeeping
AD-005	Permit to Construct issued September 27, 2012, and modified September 16, 2016	5.B.9	NO <sub>x</sub>	Annual stack test
		5.B.10	Ammonia Production	Monitoring and recordkeeping
		5.B.11	Heat Input	Fuel monitoring and recordkeeping
AE-003 AE-005 AE-006 AE-007	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).	5.B.12	Opacity	Use correlation of concentration from NO <sub>x</sub> CEMS to demonstrate compliance with opacity limit
	40 CFR 60.73(a)-(c), Subpart G and U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011)	5.B.13	NO <sub>x</sub>	Install, maintain, and operate CEMS
			Production rate/hours of operation	Monitor and record daily production rate and hours of operation for each plant
	40 CFR 64	5.B.14	NO <sub>x</sub>	CAM requirements
AF-001 AF-002 AF-003	PSD Permit to Construct issued September 21, 2004, and 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(a)(2).	5.B.15	PM/PM <sub>10</sub>	Biennial stack test

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement
	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(a)(2).	5.B.16	Opacity	Monitor opacity per VEE
	40 CFR Part 64	5.B.14	PM/PM <sub>10</sub>	CAM requirements
AF-004	IGAN Project Construction Permit issued February 2, 2015	5.B.17	PM/PM <sub>10</sub>	Biennial stack test
	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(a)(2).	5.B.16	Opacity	Monitor opacity per VEE
	40 CFR Part 64	5.B.14	PM/PM <sub>10</sub>	CAM requirements
AF-005	IGAN Project Construction Permit issued February 2, 2015	5.B.18	PM (filterable only)	Biennial stack test
			PM <sub>10</sub> /PM <sub>2.5</sub> (filterable + condensable)	
	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(a)(2).	5.B.16	Opacity	Monitor opacity per VEE
	IGAN Project Construction Permit issued February 2, 2015	5.B.19	Scrubber operating parameters	Record operating data every 15 minutes
	40 CFR Part 64	5.B.14	PM/PM <sub>10</sub>	CAM requirements
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-013	40 CFR 63.6625(f) and 63.6655(f)(1), Subpart ZZZZ	5.B.20	HAP	Install non-resettable hour meter and record hours of operation.
	40 CFR 63.6655(a)(1), (2), and (5) and (e)(2) and 63.6660, Subpart ZZZZ	5.B.21		General recordkeeping
AK-011	40 CFR 60.4209(a) and 60.4214(b), Subpart IIII	5.B.22	NMHC + NO <sub>x</sub> PM (filterable only) CO SO <sub>2</sub>	Install non-resettable hour meter and record hours of operation
	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(a)(2).	5.B.23		Records concerning specifications of diesel fuel
AK-012	40 CFR 60.4237 (c) and 60.4245(b), Subpart JJJJ	5.B.24	NO <sub>x</sub> + HC CO	Install non-resettable hour meter and record hours of operation
	40 CFR 60.4245(a)(1)-(3), Subpart JJJJ	5.B.25		General recordkeeping requirements

5.B.1 Regular maintenance shall be performed, as necessary, to maintain proper operation of pollution control equipment. The permittee shall maintain a log of control equipment malfunctions and downtime, including the date, time, duration, and cause of the malfunction or downtime and the corrective and/or preventive action(s) taken as a result of the malfunction or downtime. These records must be made available for review upon

request by MDEQ personnel.

(Ref.: 11 Miss. Admin. Code, Pt. 2, R. 6.3.A(3)(a)(3))

- 5.B.2 For Emission Point AB-001, the permittee shall conduct a biennial stack test in accordance with EPA Reference Method 7B, 40 CFR 60, Appendix A. For the purposes of compliance demonstration, the permittee shall operate the source at the maximum rated capacity. The biennial stack test shall be completed by January 31<sup>st</sup> of each even-numbered year.

The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to MDEQ. If the initial protocol is acceptable, subsequent protocols may be waived if they do not contain significant changes. Additionally, the MDEQ shall be notified at least ten (10) days prior to the scheduled test date so that an observer may be present to witness the test(s).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2))

- 5.B.3 For Emission Points AB-001, AB-002, and AB-003, the permittee shall monitor and record the hourly gas flow in scfh supplied to each unit. These records may be maintained in electronic form on the facility's Plant Information (PI) system. These records shall be made available for review upon request by MDEQ.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2))

- 5.B.4 For Emission Point AB-003, the permittee shall demonstrate compliance with the emission limits for NO<sub>x</sub> by conducting a stack test biennially in accordance with EPA Reference Method 20, 40 CFR 60, Appendix A. For the purposes of compliance demonstration, the permittee shall operate the source at peak load. In lieu of using Method 20, the permittee may use EPA Reference Method 7E and either Method 3 or 3A for determining NO<sub>x</sub> and diluent concentrations. The biennial stack test shall be completed by January 31<sup>st</sup> of each even-numbered year.

The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to MDEQ. If the initial protocol is acceptable, subsequent protocols may be waived if they do not contain significant changes. Additionally, the MDEQ shall be notified at least ten (10) days prior to the scheduled test date so that an observer may be present to witness the test(s).

(Ref.: 40 CFR 334(c), Subpart GG)

- 5.B.5 For Emission Point AB-003, the permittee shall demonstrate compliance with the sulfur dioxide standard in 40 CFR 60.333 by maintaining documentation that the gaseous fuel meets the definition of "natural gas" as defined in 40 CFR 60.331(u).

(Ref.: 40 CFR 60.334(h)(3), Subpart GG)

- 5.B.6 For Emission Point AB-003, the permittee shall record and maintain records of the amount of fuel combusted in the Coen burner on a monthly basis. These records shall be maintained by the permittee for a period of two years following the date of such records.

(Ref.: 40 CFR 60.48c(g) and (i), Subpart Dc)

5.B.7 For Emission Point AD-003, the permittee shall keep fuel usage records for the days the process heater operates.  
(Ref.: 40 CFR 63.7525(k), Subpart DDDDD)

5.B.8 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall keep the following records:

- (a) A copy of each notification and report that has been submitted to comply with Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report.
- (b) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations.
- (c) For AD-003, a copy of the permit which limits the annual capacity factor to less than or equal to 10 percent and the fuel use records for the days the process heater operated.

For Emission Points AB-001, AB-002, AD-003, and AD-005, all records shall be in a form suitable and readily available for expeditious review and shall be kept for a period of five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report or record. These records must be kept or accessible (i.e., through a computer network) on-site for at least two (2) years after the date the record was created. The records may be kept off-site for the remaining three (3) years.

(40 CFR 63.7555(a)(1)-(3) and 63.7560, Subpart DDDDD)

5.B.9 For Emission Point AD-005, the permittee shall demonstrate compliance with the hourly NO<sub>x</sub> emission limit by conducting an annual stack test using EPA Reference Method 7E or approved equivalent. The stack test shall be completed prior to December 31<sup>st</sup> each year.

The MDEQ shall be notified at least ten (10) days prior to the scheduled test date so that an observer may be present to witness the test.

(Ref.: Permit to Construct issued September 27, 2012, and modified September 16, 2016)

5.B.10 For Emission Point AD-005, the permittee shall demonstrate compliance with the ammonia production limit by recording the amount of ammonia produced in short tons (2,000 pounds) for each calendar month and calculating a total production rate for each consecutive 12-month period. Records shall be kept documenting the raw operating data and supporting calculations used to demonstrate compliance with the limit.

(Ref.: Permit to Construct issued September 27, 2012, and modified September 16, 2016)

5.B.11 For Emission Point AD-005, the permittee shall demonstrate compliance with the heat input limit by keeping records of the amount of each fuel (natural gas or purge gas), in standard cubic feet (scf), fired in each of the burner types (i.e., Primary, Tunnel, and Superheater) and Auxiliary Boiler for each calendar month. The monthly total heat input

should be calculated using the recorded monthly fuel usage values and the heating value of each fuel in btu/scf that is determined through an annual analysis of each fuel using ASTM 3588 or approved equivalent. The calculated monthly total should be used to calculate the total heat input for each consecutive 12-month period. Records shall be kept documenting the raw operating data and supporting calculations used to demonstrate compliance with the limit.

(Ref.: Permit to Construct issued September 27, 2012, and modified September 16, 2016)

- 5.B.12 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall demonstrate compliance with the opacity limit by measuring the NO<sub>x</sub> concentration using the CEMS required by 40 CFR 60, Subpart G. NO<sub>x</sub> concentrations averaged over a 3-hour rolling period (calculated hourly) that exceed the values in the table below shall indicate an exceedance of the opacity standard, unless otherwise demonstrated by a visible emissions evaluation (VEE) per EPA Test Method 9.

Emission Point	Nitric Acid Plant	NO <sub>x</sub> Concentration (ppmvd)
AE-003	AOP-6	354
AE-005	AOP-8	234
AE-006	AOP-9	226
AE-007	AOP-10	242

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

- 5.B.13 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall install, calibrate, maintain, and operate a continuous monitoring system for measuring NO<sub>x</sub> in accordance with the CEMS/CAM Plan contained in Appendix C of this permit. The permittee shall comply with the requirements of 40 CFR 60.13 and Appendix B of 40 CFR 60 for the continuous monitoring system. The permittee shall establish a conversion factor in accordance with 60.73(b) for the purpose of converting monitoring data into units of the applicable standard. The conversion factor shall be re-established during each Relative Accuracy Test Audit (RATA) conducted in accordance with 40 CFR 60, Appendix F. The permittee shall also record the daily production rate and hours of operation for each plant.  
(Ref.: 40 CFR 60.73(a)-(c), Subpart G and U.S. vs. Terra Industries, et al. Consent Decree (June 6, 2011))

- 5.B.14 For Emission Points AE-003, AE-005, AE-006, AE-007, AF-001, AF-002, AF-003, AF-004, and AF-005 the permittee shall comply with the monitoring and recordkeeping requirements of the Compliance Assurance Monitoring (CAM) Plans contained in Appendix C of this permit. The permittee shall also comply with all applicable requirements in 40 CFR 64.7, 64.8, and 64.9.  
(Ref.: 40 CFR 64)

- 5.B.15 For Emission Points AF-001, AF-002, and AF-003 the permittee shall demonstrate compliance with the permitted emission limits for PM by conducting a biennial stack test. The stack test shall be completed by January 31<sup>st</sup> of each even numbered year. For the

purpose of compliance demonstration, the permittee shall operate each source at their maximum capacity of low-density ammonium nitrate (LDAN) prills or high-density ammonium nitrate (HDAN).

The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to MDEQ. If the initial test protocol is acceptable, subsequent protocols may be waived if these protocols contain no significant changes. Also, the MDEQ must be notified at least ten (10) days prior to the scheduled test date so an observer may be present to witness the test(s).

(Ref.: PSD Permit to Construct issued September 21, 2004, and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

- 5.B.16 For Emission Points AF-001, AF-002, AF-003, AF-004, and AF-005. the permittee shall demonstrate compliance with the opacity limit by completing a visible emissions evaluation (VEE) per EPA Reference Method 9, 40 CFR 60, Appendix A. The observations should be completed concurrently during the required biennial stack tests. If visibility or other conditions prevent the opacity observations from being performed concurrently with the stack testing, the permittee shall reschedule the opacity observations as soon after the stack tests as possible, but no later than thirty (30) days.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

- 5.B.17 For Emission Point AF-004, the permittee shall demonstrate compliance with the permitted emission limits for PM by conducting a biennial stack test in accordance with EPA Reference Methods 1-5, 40 CFR 60, Appendix A. Subsequent biennial tests shall be completed within 24 months of the previous performance test. The permittee shall operate the source as close to the maximum rated capacity as operating conditions allow during the performance test.

A written test protocol must be submitted at least thirty (30) days prior to the scheduled test date(s) to ensure that all test methods and procedures are acceptable to MDEQ. If the permittee is proposing an alternative test method not previously approved by EPA, a cover letter indicating such must be attached and submitted with the test protocol. If the initial test protocol is acceptable, subsequent protocols may be waived if there are not significant changes. Also, the MDEQ must be notified at least ten (10) days prior to the scheduled test date so that an observer may be present to witness the test(s).

(Ref.: IGAN Project Construction Permit issued February 2, 2015)

- 5.B.18 For Emission Point AF-005, the permittee shall demonstrate compliance with the permitted emission limits for PM by conducting a biennial stack test in accordance with EPA Reference Methods 5, 201, and 201A or other EPA-approved equivalent to determine the filterable portion and EPA Method 202 or other EPA-approved equivalent to determine the condensable portion. The test method used to determine the filterable portion shall measure the total PM mass, the mass of PM with a diameter of 10 microns and less, and the mass of PM with a diameter of 2.5 microns and less. The permittee may choose to assume all of the total filterable PM (Method 5) to be 2.5 microns or less. Should the permittee choose to use this assumption and the test results show total PM emissions greater than any of the PM

emission limits, the MDEQ shall assume the emission point is out of compliance with all fractions of PM for which the test results showed an exceedance. Subsequent biennial stack tests shall be completed within 24 months of the previous performance test. The permittee shall operate the source as close to the maximum rated capacity as operating conditions allow during the performance test.

A written test protocol must be submitted at least thirty (30) days prior to the scheduled test date(s) to ensure that all test methods and procedures are acceptable to MDEQ. If the permittee is proposing an alternative test method not previously approved by EPA, a cover letter indicating such must be attached and submitted with the test protocol. If the initial test protocol is acceptable, subsequent protocols may be waived if there are not significant changes. Also, the MDEQ must be notified at least ten (10) days prior to the scheduled test date so that an observer may be present to witness the test(s).

(Ref.: IGAN Project Construction Permit issued February 2, 2015)

- 5.B.19 For Emission Point AF-005, the permittee shall record the differential pressure and the recirculating pump amperage to ensure the No. 5 Finishing Train Wet Scrubber is operated within the operating limits established in this permit. Data shall be recorded every 15 minutes during periods when the No. 5 Finishing Train is in operation.

(Ref.: IGAN Project Construction Permit issued February 2, 2015)

- 5.B.20 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, and AK-013, the permittee shall install a non-resettable hour meter on each engine (if not already installed). The permittee shall keep records of the hours of operation of each engine that are recorded through the hour meters. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency, and how many hours are spent for non-emergency operation.

(Ref.: 40 CFR 63.6625(f) and 63.6655(f)(1), Subpart ZZZZ)

- 5.B.21 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, and AK-013, the permittee shall keep the following records:

- (a) A copy of each notification and report submitted to comply with Subpart ZZZZ.
- (b) Records of the occurrence and duration of each malfunction of an engine or hour meter.
- (c) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore a malfunctioning engine or hour meter to its normal manner of operation.
- (d) Records of the maintenance conducted on each engine in order to demonstrate the engines were operated and maintained in accordance to the maintenance plan.

All records shall be in a form suitable and ready for expeditious review for a period of five (5) years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. These records may be kept in an electronic or hard copy format.

(Ref.: 40 CFR 63.6655(a)(1), (2), and (5) and 63.6660, Subpart ZZZZ)

- 5.B.22 For Emission Point AK-011, the permittee shall install a non-resettable hour meter on the engine, if one is not already installed. The permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the hour meter. The permittee shall record the time of operation and the reason the engine was in operation during that time.  
(Ref.: 40 CFR 60.4209(a) and 60.4214(b), Subpart III)
- 5.B.23 For Emission Point AK-011, the permittee shall maintain records documenting the diesel fuel meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.  
(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)
- 5.B.24 For Emission Point AK-012, the permittee shall install a non-resettable hour meter on the engine, if one is not already installed. The permittee shall keep records of the operation of the engine that is recorded through the hour meter. The permittee shall document how many hours are spent in emergency operation, included what classified the operation as an emergency, and how many hours are spent in non-emergency operation.  
(Ref.: 40 CFR 60.4237(c) and 60.4245(b), Subpart JJJJ)
- 5.B.25 For Emission Point AK-012, the permittee shall keep the following records:
- (a) A copy of all notifications submitted to comply with Subpart JJJJ and any corresponding supporting information
  - (b) Records documenting the maintenance conducted on the engine.
  - (c) Documentation from the engine manufacturer that the engine is certified to meet the emission standards.
- (Ref.: 40 CFR 60.4245(a)(1)-(3), Subpart JJJJ)

C. Specific Reporting Requirements

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant/Parameter Monitored	Reporting Requirement
AB-001 AB-002 AD-003 AD-005	40 CFR 63.7550(a), (b), (c), (d), and (h)(3), and Table 9, Subpart DDDDD	5.C.1	HAP	Compliance report
AE-003 AE-005 AE-006 AE-007	40 CFR 60.73(e), Subpart G	5.C.2	NO <sub>x</sub>	Excess emissions reporting
	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).	5.C.3		Semi-annual reporting of NO <sub>x</sub> emissions
		5.C.4	Opacity	Semi-annual reporting of opacity emissions
AE-003 AE-005 AE-006 AE-007 AF-001 AF-002 AF-003 AF-004 AF-005	40 CFR 64.9, Compliance Assurance Monitoring	5.C.5	CAM Indicators	Semi-annual reporting of excursions and/or exceedances of limits, indicator ranges and/or conditions in CAM Plan found in Appendix C
AB-002	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).	5.C.6	Fuel Usage	Report fuel usage rates
Facility-wide	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).	5.C.7	Stack test results	Report results of stack tests
AB-004 AJ-004 AJ-005 AK-003 AK-004 AK-005 AK-013	40 CFR 63.6640(b), 63.6650(f), and Footnote 1 to Table 2c, Subpart ZZZZ	5.C.8	HAP	Report deviations

5.C.1 For Emission Points AB-001, AB-002, AD-003 and AD-005, the permittee shall include the following information in the annual compliance report required in Condition 4.2 of this permit for the year a tune-up is required:

- (a) Company and facility name and address.
- (b) Process unit information, emission limitations, and operating parameter limitations.
- (c) Date of report and beginning and ending dates of the reporting period.
- (d) The date of the most recent tune-up and date of the most recent burner inspection it is was not done in conjunction with the tune-up and was delayed until the next scheduled or unscheduled unit shutdown.

- (e) A statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
- (f) For Emission Point AD-003, the compliance report shall also include the total operating time during the reporting period.
- (g) For a deviation from an operating limit, the compliance report shall contain the information in (1)-(3) below:
  - (1) The description of the deviation and which operating or work practice standard that was deviated from; and,
  - (2) Information on the number, duration, and cause of the deviation(s) and what corrective actions were taken.
- (h) The information required in (a)-(g) above must be submitted electronically to EPA via the Compliance and Emissions Data Reporting Interface (CEDRI) that can be accessed through EPA's Central Data Exchange (CDX). The permittee shall use the appropriate electronic report in CEDRI for Subpart DDDDD.

(Ref.: 40 CFR 63.7550(a), (b), (c), (d), and (h)(3), and Table 9, Subpart DDDDD)

5.C.2 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit semi-annual excess emission reports containing the information in 40 CFR 60.7(c)(1)-(4). The semi-annual report shall be postmarked by the 30<sup>th</sup> day following the end of each six-month period. If there are no excess emissions during the reporting period, the permittee shall submit a report stating such. Excess emissions are defined in Subpart G as any 3-hour period during which the nitrogen oxides emissions (arithmetic average of three contiguous 1-hour periods) as measured by the CEMS exceed the standard.

(Ref.: 40 CFR 60.73(e), Subpart G)

5.C.3 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit a summary of the NO<sub>x</sub> emissions in tons per year from each emission point for each consecutive 12-month period in the semi-annual reporting period specified in Condition 5.A.4.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(c)(1).)

5.C.4 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit in the semi-annual report required in Condition 5.A.5, any instances where a 3-hour average NO<sub>x</sub> concentration exceeded the values established to demonstrate compliance with the opacity limit. The permittee shall also submit the results of any VEEs conducted per EPA Test Method 9 during periods when the CEMS indicated an exceedance of the NO<sub>x</sub> concentration.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.C.5 For Emission Points AE-003, AE-005, AE-006, AE-007, AF-001, AF-002, AF-003, AF-004, and AF-005, the permittee shall comply with the reporting requirements contained in 40 CFR 64.9 by submitting a summary of the number, duration, and cause of excursions and/or exceedances and the corrective actions taken, as well as a summary on the number,

duration, and cause of monitor downtime incidents. This information shall be submitted in accordance with Condition 5.A.4 of this permit and retained at the facility in accordance with Condition 5.A.3.

(Ref.: 40 CFR 64.9, Compliance Assurance Monitoring)

- 5.C.6 For Emission Point AB-002, the permittee shall report any hourly gas flow rate that exceeds 6,000 scfh when both the Auxiliary Boiler No. 1 (Emission Point AB-001) and the Cogeneration Facility (Emission Point AB-003) are in operation. The date and hour of each such occurrence shall be recorded and reported in the semi-annual report required by Condition 5.A.4.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

- 5.C.7 The permittee shall submit results from any required stack tests to the MDEQ within 45-days of the completion of any stack test required by this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

- 5.C.8 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, and AK-013, the permittee shall report all deviations from any emission or operating limitation of Subpart ZZZZ in the semi-annual report required by Condition 5.A.4. Such deviations shall include any failure to perform the work practice on the required schedule. In the event a work practice is delayed because the engine is operating during an emergency or if performing the work practice on the required schedule posed an unacceptable risk under federal, state, or local law, the permittee shall include in the report the reason for the delay.

(Ref.: 40 CFR 63.6640(b), 63.6650(f), and Footnote 1 to Table 2c, Subpart ZZZZ)

**SECTION 6. ALTERNATIVE OPERATING SCENARIOS**

6.1 None permitted.

## SECTION 7. TITLE VI REQUIREMENTS

The following are applicable or potentially applicable requirements originating from Title VI of the Clean Air Act – Stratospheric Ozone Protection. The full text of the referenced regulations may be found on-line at under Title 40, or DEQ shall provide a copy upon request from the permittee.

- 7.1 If the permittee produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart A – Production and Consumption Controls.
- 7.2 If the permittee performs service on a motor vehicle for consideration when this service involves the refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart B – Servicing of Motor Vehicle Air Conditioners.
- 7.3 The permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart E – The Labeling of Products Using Ozone-Depleting Substances, for the following containers and products:
  - (a) All containers in which a class I or class II substance is stored or transported;
  - (b) All products containing a class I substance; and
  - (c) All products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless EPA determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available. If the EPA makes such a determination for a particular product, then the requirements of this subpart are effective for such product no later than January 1, 2015.
- 7.4 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart F – Recycling and Emissions Reduction:
  - (a) Servicing, maintaining, or repairing appliances;
  - (b) Disposing of appliances, including small appliances and motor vehicle air conditioners; or
  - (c) Refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing organizations, as well as persons selling, offering for sale, and/or purchasing class I, class II, or non-exempt substitute refrigerants.
- 7.5 The permittee shall be allowed to switch from any ozone-depleting substance to any

acceptable alternative that is listed in the Significant New Alternatives Policy (SNAP) program promulgated pursuant to 40 CFR Part 82, Subpart G – Significant New Alternatives Policy Program. The permittee shall also comply with any use conditions for the acceptable alternative substance.

- 7.6 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart H – Halon Emissions Reduction:
- (a) Any person testing, servicing, maintaining, repairing, or disposing of equipment that contains halons or using such equipment during technician training;
  - (b) Any person disposing of halons;
  - (c) Manufacturers of halon blends; or
  - (d) Organizations that employ technicians who service halon-containing equipment.

# APPENDIX A

## List of Abbreviations Used In This Permit

11 Miss. Admin. Code Pt. 2, Ch. 1.	Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants
11 Miss. Admin. Code Pt. 2, Ch. 2.	Permit Regulations for the Construction and/or Operation of Air Emissions Equipment
11 Miss. Admin. Code Pt. 2, Ch. 3.	Regulations for the Prevention of Air Pollution Emergency Episodes
11 Miss. Admin. Code Pt. 2, Ch. 4.	Ambient Air Quality Standards
11 Miss. Admin. Code Pt. 2, Ch. 5.	Regulations for the Prevention of Significant Deterioration of Air Quality
11 Miss. Admin. Code Pt. 2, Ch. 6.	Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act
11 Miss. Admin. Code Pt. 2, Ch. 7.	Acid Rain Program Permit Regulations for Purposes of Title IV of the Federal Clean Air Act
BACT	Best Available Control Technology
CEM	Continuous Emission Monitor
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
COMS	Continuous Opacity Monitoring System
DEQ	Mississippi Department of Environmental Quality
EPA	United States Environmental Protection Agency
gr/dscf	Grains Per Dry Standard Cubic Foot
HP	Horsepower
HAP	Hazardous Air Pollutant
lbs/hr	Pounds per Hour
M or K	Thousand
MACT	Maximum Achievable Control Technology
MM	Million
MMBTUH	Million British Thermal Units per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61 or National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR 63
NMVOC	Non-Methane Volatile Organic Compounds
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards, 40 CFR 60
O&M	Operation and Maintenance
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter less than 10 μm in diameter
ppm	Parts per Million
PSD	Prevention of Significant Deterioration, 40 CFR 52
SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
TPY	Tons per Year
TRS	Total Reduced Sulfur
VEE	Visible Emissions Evaluation
VHAP	Volatile Hazardous Air Pollutant
VOC	Volatile Organic Compound

## **APPENDIX B**

### **List of Regulations Referenced In This Permit**

**The full text of the regulations referenced in this permit may be found on-line at <http://www.deq.state.us> and <http://ecfr.gpoaccess.gov> or the Mississippi Department of Environmental Quality will provide a copy upon request. A list of regulations referenced in this permit is shown below:**

11 Miss. Admin. Code, Part 2, Ch. 1. – Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants (Amended November 10, 2016)

11 Miss. Admin. Code, Part 2, Ch. 2. – Permit Regulations for the Construction and/or Operation of Air Emissions Equipment (Amended July 28, 2005)

11 Miss. Admin. Code, Part 2, Ch. 6. – Air Emission Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act (Amended June 28, 2012)

40 CFR 82, Protection of Stratospheric Ozone

40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60, Subpart G, Standards of Performance for Nitric Acid Plants

40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines

40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

40 CFR 63, Subpart YYYY, NESHAP for Stationary Combustion Turbines

40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines

40 CFR 63, Subpart DDDDD, NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

40 CFR 64, Compliance Assurance Monitoring

40 CFR 72-78, Acid Rain Program General Provisions

# **APPENDIX C**

## **Compliance Assurance Monitoring Plan**

**CAM PLAN FOR EMISSION POINT AF-001  
CONDENSER-CONCENTRATOR**

	<b>Indicator No. 1</b>	<b>Indicator No. 2</b>	<b>Indicator No. 3</b>	<b>Indicator No. 4</b>
<b>Indicator</b>	Amperage on the non-condensibles blower to the packed tower scrubber.	Amperage on the cooling air blowers to the packed tower scrubber.	Amperage on the recirculation pumps of the scrubber.	Thermocouple temperature reading over each of five (5) seal pots.
<b>Measurement Approach</b>	Fan amperage of the non-condensibles blower will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.	Fan amperage of the cooling air blowers will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.	Thermocouples (indicating temperature) mounted above each of five (5) seal pots will be continuously monitored to indicate flow. An alarm will sound when an elevated temperature is indicated.
<b>Monitoring Methods and Location</b>	The amperage meter is physically connected to the blower electrical system and data is electronically recorded.	The amperage meter is physically connected to the blower electrical system and data is electronically recorded.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.	Thermocouples will measure temperature above seal pots and data electronically recorded.
<b>Indicator Range</b>	An excursion is defined as any 3- hour average amperage value below 5 amps. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of all three blowers are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when there are not at least two pumps on-line with amperage values of 5 or above. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any continuous sixty (60) minute period during plant operation where the thermocouple reading above any seal pot exceeds 180° F. Excursions trigger an inspection, corrective action and reporting.
<b>Data Collection Frequency</b>	Amperage is monitored and recorded continuously.	Amperage is monitored and recorded continuously.	Amperage is monitored and recorded continuously.	Thermocouple temperature readings are monitored and recorded continuously.
<b>Averaging Period</b>	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.	Data is recorded continuously and averaged for each minute. Sixty consecutive one-minute readings are then used for determining an excursion.
<b>Record-keeping</b>	Records of the amperage value and corrective action taken are generated whenever an alarm sounds. Electronic records of all the data collected are also available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that there are no blowers online. Electronic records of all the data collected are also available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that less than two pumps are online. Electronic records of all the data collected are also available.	Records of temperature above the seal pots and corrective action taken are logged whenever an alarm sounds. Electronic records of all the data collected are also available.
<b>QA/QC</b>	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the fullscale.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the full scale.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the fullscale.	The thermocouples shall be maintained pursuant to manufacturer's specifications.

***CAM PLAN FOR EMISSION POINT AF-002  
#2 BRINKS SCRUBBER***

	<b>Indicator No. 1</b>	<b>Indicator No. 2</b>
<b>Indicator</b>	Differential pressure across the scrubber.	Amperage on the recirculation pumps of the scrubber.
<b>Measurement Approach</b>	Differential pressure will be continuously measured with a differential pressure gauge to ensure adequate water flow and proper operation of the scrubber. An alarm will sound when differential pressure approaches the indicator value.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure proper circulation of the scrubber solution. An alarm will sound when a low amperage level is indicated.
<b>Monitoring Methods and Location</b>	Pressure taps are located upstream and downstream of the scrubber's packing material.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
<b>Indicator Range</b>	An excursion is defined as any 3-hour average differential pressure value less than 5.5 inches of water. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of both pumps are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.
<b>Data Collection Frequency</b>	Pressure differential is monitored and recorded continuously.	Amperage is monitored and recorded continuously.
<b>Averaging Period</b>	Readings are taken every 15 minutes and averaged for the hour. A subsequent 3-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
<b>Recordkeeping</b>	Pressure differential is electronically recorded on a continuous basis and hourly data shall be made available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that there are no pumps online. Electronic records of all the data collected are also available.
<b>QA/QC</b>	The pressure gauges are calibrated quarterly. Pressure taps are checked for plugging daily. The alarm is tested quarterly. The gauges shall have a minimum accuracy of 0.5 inches of water.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the full scale.

***CAM PLAN FOR EMISSION POINT AF-003  
#3 BRINKS SCRUBBER***

	<b>Indicator No. 1</b>	<b>Indicator No. 2</b>
<b>Indicator</b>	Differential pressure across the scrubber.	Amperage on the recirculation pumps of the scrubber.
<b>Measurement Approach</b>	Differential pressure will be continuously measured with a differential pressure gauge to ensure adequate water flow and proper operation of the scrubber. An alarm will sound when differential pressure approaches the indicator value.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure proper circulation of the scrubber solution. An alarm will sound when a low amperage level is indicated.
<b>Monitoring Methods and Location</b>	Pressure taps are located upstream and downstream of the scrubber's packing material.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
<b>Indicator Range</b>	An excursion is defined as any 3-hour average differential pressure value less than 5.5 inches of water. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3- hour period during plant operation when the amperage values of both pumps are below 5 amps at one time. Excursions trigger an inspection, corrective action, and
<b>Data Collection Frequency</b>	Pressure differential is monitored and recorded continuously in the DCS system.	Amperage is monitored and recorded continuously in the DCS
<b>Averaging Period</b>	Readings are taken every 15 minutes and averaged for the hour. A subsequent 3-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
<b>Recordkeeping</b>	Pressure differential is electronically recorded on a continuous basis and hourly data shall be made available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that the amperage is below 5 amps. Electronic records of all the data collected are also available.
<b>QA/QC</b>	The pressure gauges are calibrated quarterly. Pressure taps are checked for plugging daily. The alarm is tested quarterly. The gauges shall have a minimum accuracy of 0.5 inches of water.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the full scale.

**CAM PLAN FOR EMISSION POINT AF-004  
COMBINED STACK (#4 FINISHING TRAIN)**

*(No. 4 ANF Finishing Train Pre-Cooler, No. 4 ANF Finishing Train Cooler, No. 4 ANF Finishing Train Pre-Dryer, No. 4 ANF Finishing Train Dryer)*

	<b>FLY ASH SCRUBBERS</b>
	<b>Indicator No. 1</b>
<b>Indicator</b>	Water level of each fly ash scrubber sump.
<b>Measurement Approach</b>	Manually measure the water level using the staff gauge located in each sump to ensure adequate water is entrapped with the entering air for PM removal.
<b>Monitoring Methods and Location</b>	A graduated staff gauge is located in the sump of each scrubber.
<b>Indicator Range</b>	An excursion is defined as a water level less than 10.5 inches on the staff gauge. Excursions trigger an inspection, corrective action, and reporting.
<b>Data Collection Frequency</b>	Water level is manually measured once per day.
<b>Averaging Period</b>	Not Applicable. (Instantaneous measurement)
<b>Recordkeeping</b>	Water level height recorded manually once per day.
<b>QA/QC</b>	The staff gauge is checked for accuracy, cleaned as required, and repaired/replaced, if necessary, on a quarterly basis. Measurements should be accurate within $\pm 0.5$ inches.

***CAM PLAN FOR EMISSION POINT AF-005  
IGAN FINISHING TRAIN***

	<b>Indicator No. 1</b>	<b>Indicator No. 2</b>
<b>Indicator</b>	Differential pressure across the scrubber.	Amperage on the recirculation pumps of the scrubber.
<b>Measurement Approach</b>	Differential pressure will be continuously measured with a differential pressure gauge to ensure adequate water flow and proper operation of the scrubber. An alarm will sound when differential pressure approaches the indicator value.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure proper circulation of the scrubber solution. An alarm will sound when a low amperage level is indicated.
<b>Monitoring Methods and Location</b>	Pressure taps are located upstream and downstream of the scrubber's packing material.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
<b>Indicator Range</b>	An excursion is defined as any 3-hour average differential pressure value less than 20.0 inches of water. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of both pumps are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.
<b>Data Collection Frequency</b>	Pressure differential is monitored and recorded continuously in the DCS system.	Amperage is monitored and recorded continuously in the DCS system.
<b>Averaging Period</b>	Readings are taken at least every minute and averaged over 15 minutes. Then, four 15-minute readings are averaged to get a 1-hour reading. A subsequent 3-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
<b>Recordkeeping</b>	Pressure differential is electronically recorded on a continuous basis and hourly data shall be made available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that the amperage is below 5 amps. Electronic records of all the data collected are also available.
<b>QA/QC</b>	The pressure gauges are calibrated quarterly. Pressure taps are checked for plugging daily. The alarm is tested quarterly. The gauges shall have a minimum accuracy of 0.5 inches of water.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of $\pm 0.5\%$ of the full scale.

## **CAM PLAN FOR AE-003, AE-005, AE-006 AND AE-007**

*(Per the provisions of the 2011 negotiated Consent Decree between EPA and Terra, the following CEMS Plan, which was contained in Attachment C of the Consent Decree, will serve as the CAM Plan for AE-003, AE-005, AE-006 and AE-007.)*

### **TERRA NITRIC ACID PLANT CEMS PLAN U.S. et. al. v. Terra Industries, Inc., et. al.**

#### **CEMS Plan for NO<sub>x</sub> Emissions**

**Terra Industries Inc., Terra Nitrogen, Limited Partnership, Terra International (Oklahoma) Inc., Port Neal Corporation, and Terra Mississippi Nitrogen, Inc.  
Covered Nitric Acid Plants**

#### **Principle**

This CEMS Plan is the mechanism for determining compliance with the Short-Term NO<sub>x</sub> Limit and Long-Term NO<sub>x</sub> Limit applicable to each Covered Nitric Acid Plant as specified in the Consent Decree and is used to evaluate the compliance status with the NSPS NO<sub>x</sub> limits. The methodology described in this CEMS Plan will provide a continuous indication of compliance with the above-referenced NO<sub>x</sub> emission limits established in the Consent Decree by accurately determining the emission rate in terms of pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (lb/ton) as a rolling 3-hour average and a rolling 365-day average. The CEMS will utilize equipment to measure stack NO<sub>x</sub> concentration and the stack volumetric flow rate. From this data, real-time, accurate, and quality controlled measurements of the mass NO<sub>x</sub> emission rate can be obtained.

#### **Definitions**

Terms used in this CEMS Plan that are defined in the Clean Air Act (“CAA”) or in Federal or state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein. The following definitions specifically apply for purposes of this CEMS Plan.

- “CEMS” or “Continuous Emission Monitoring System” shall mean the total equipment, required under this CEMS Plan, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.
- “Day,” “day,” or “calendar day” shall mean a calendar day.
- “Long-Term NO<sub>x</sub> Limit” shall mean a 365-day rolling average NO<sub>x</sub> emission limit (rolled daily) expressed as pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (“lb/ton”); compliance with the Long-Term NO<sub>x</sub> Limit shall be calculated in accordance with this CEMS Plan. The Long-Term NO<sub>x</sub> Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction.

- “Malfunction” shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in whole or in part by poor maintenance or careless operation.
- “NSPS NO<sub>x</sub> Limit” shall mean the NO<sub>x</sub> emission limit expressed as 1.5 kg of NO<sub>x</sub> per metric ton of 100% Nitric Acid Produced (3 lb per ton) specified at 40 C.F.R. § 60.72(a)(1).
- “NO<sub>x</sub>” shall mean the pollutant nitrogen oxides. For the purposes of calculating mass emission rates, NO<sub>x</sub> has a molecular weight of 46.0055 lb/lb-mol.
- “NO<sub>x</sub> stack analyzer” shall mean that portion of the CEMS that senses NO<sub>x</sub> and generates an output proportional to the NO<sub>x</sub> concentration.
- “100% Nitric Acid Produced” shall mean the quantity of a nitric acid product manufactured by a Nitric Acid Plant multiplied by the concentration of actual nitric acid in the product. For example, if a Nitric Acid Plant produces 100 tons of a 54% nitric acid product, this equals 54 tons of 100% Nitric Acid Produced.
- “One-hour period” and “1-hour period” shall mean any 60-minute period commencing on the hour.
- “One-minute measurement” shall mean any single measurement or the arithmetic average of multiple measurements of a parameter during a one-minute period on-the-clock.
- “Operating Periods” shall mean periods during which a Covered Nitric Acid Plant is producing nitric acid and NO<sub>x</sub> is emitted, including periods of Startup, Shutdown and Malfunction.
- “Short-Term NO<sub>x</sub> Limit” shall mean a 3-hour rolling average NO<sub>x</sub> emission limit (rolled hourly) expressed in terms of pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (“lb/ton”); compliance with the Short-Term NO<sub>x</sub> Limit shall be calculated in accordance with this CEMS Plan. The Short-Term NO<sub>x</sub> Limit does not apply during periods of Startup, Shutdown, or Malfunction.
- “Shutdown” shall mean the cessation of nitric acid production operations of a Covered Nitric Acid Plant for any reason. Shutdown begins at the time the feed of ammonia to the Covered Nitric Acid Plant ceases and ends 3 hours later.
- “Stack flowmeter” shall mean that portion of the CEMS that senses the volumetric flow rate and generates an output proportional to that flow rate.
- “Startup” shall mean the process of initiating nitric acid production operations of a Covered Nitric Acid Plant. Startup begins 1 hour prior to the initiation of the feed of ammonia to the Covered Nitric Acid Plant and ends no more than 5 hours after such initiation of the feed of ammonia.
- “Ton” or “tons” shall mean short ton or short tons. One Ton equals 2,000 pounds.

### **Emissions Monitoring**

Emissions monitoring under this CEMS Plan will be done using a NO<sub>x</sub> stack analyzer and a stack flowmeter on each Covered Nitric Acid Plant. Except for periods of CEMS breakdowns, analyzer malfunctions, repairs, and required quality assurance or quality control activities (including calibration checks and required zero and span adjustments), Terra will conduct

continuous monitoring pursuant to this CEMS Plan at each Covered Nitric Acid Plant during all Operating Periods as follows:

- Once every minute, the NO<sub>x</sub> stack analyzer will measure the stack NO<sub>x</sub> concentration, in parts per million by volume, dry basis (ppmvd) and the stack flowmeter will measure the volumetric flow rate in dry standard cubic feet per minute (DSCFM)<sup>4</sup>.
- For every 1-hour period (60-minute period commencing on the hour), the CEMS will reduce the 60 one-minute measurements generated by each analyzer by taking the arithmetic average of the previous 60 measurements during the 1-hour period. This data will be used to calculate the 3-hour average NO<sub>x</sub> emission rate.

#### Backup Monitoring Procedure for Long-Term NO<sub>x</sub> Limit

In the event that the NO<sub>x</sub> stack analyzer and/or stack flowmeter is/are not available or is/are out-of-control, Terra will implement the following backup monitoring procedure. The resulting data will be used to calculate the 365-day average NO<sub>x</sub> emission rate.

- Other than as specified below for a CEMS outage or out-of-control period less than 24 consecutive hours, Terra will comply with the following requirements to fill in data gaps in the array:
  - Exit stack gas will be sampled and analyzed for NO<sub>x</sub> at least once every three (3) hours, during all Operating Periods. Sampling will be conducted by making physical measurements of the NO<sub>x</sub> concentration in the gas stream to the main stack using alternative/non-CEMS methods (*e.g.*, through the use of a portable analyzer or non-certified NO<sub>x</sub> stack analyzer). The reading obtained will be substituted for the 180 (or less) one-minute measurements that would otherwise be utilized if the CEMS were operating normally. Alternatively, Terra may conduct the required sampling and analysis using a redundant certified NO<sub>x</sub> analyzer.
  - Stack volumetric flow rate will be estimated using engineering judgment.
- During required quality assurance or quality control activities (including calibration checks and required zero and span adjustments) of the CEMS and stack flowmeter, Terra may utilize the previous calendar day average value to fill in the data gaps.
- If any one or more than one of the CEMS or stack flowmeter is/are not operating for a period of less than 24 consecutive hours due to breakdowns, malfunctions, repairs, or out-of-control period of the same, Terra may utilize the previous calendar day average value recorded for each to fill in the data gaps.

---

<sup>4</sup> For the purposes of the calculations under this CEMS Plan, as-is volumetric flow rate measurements will be assumed to be dry. However, Terra may adjust for any moisture contained in the stack gas if the Covered Nitric Acid Plant is equipped with a continuous moisture analyzer.

## **Production Data**

Following each calendar day at each Covered Nitric Acid Plant, Terra will record the quantity of nitric acid produced during that day and the average strength of the nitric acid produced during that day. From this information, Terra will calculate the 100% Nitric Acid Produced for that day, in units of tons per day.

## **Conversion Factor**

During each performance test for each Covered Nitric Acid Plant required under Paragraph 15 of the Consent Decree, Terra will develop a conversion factor, in units of lb/ton of 100% Nitric Acid Produced per ppmvd consistent with 40 C.F.R. § 60.73(b).

## **Emissions Calculations**

### Rolling 3-Hour Average

Compliance with the Short-Term NO<sub>x</sub> Limit shall be based on a rolling 3-hour average (rolled hourly). For purposes of calculating a rolling 3-hour average NO<sub>x</sub> emission rate, the CEMS will maintain an array of the 3 most recent and contiguous 1-hour period average measurements of stack NO<sub>x</sub> concentration. Every hour, it will add the most recent 1-hour period average measurement to the array and exclude the oldest 1-hour period average measurement. Data generated using the backup monitoring procedure, specified above, need not be included in this calculation.

The rolling 3-hour average lb/ton NO<sub>x</sub> emission rate ( $E_{3hravg}$ ) will then be calculated every hour using Equation 1.

Equation 1:

$$E_{3hravg} = \frac{K \cdot \sum_{i=1}^3 C_{NO_x i}}{3}$$

Where:

$C_{NO_x i}$  = Arithmetic average of 60 one-minute measurements of stack NO<sub>x</sub> concentration, parts per million by volume, dry basis (ppmvd) in a 1-hour period.

$K$  = Conversion factor determined during most recent NO<sub>x</sub> performance test (lb/ton of 100% Nitric Acid Produced per ppm)

$E_{3hravg}$  = 3-hour average lb NO<sub>x</sub> per ton 100% Nitric Acid Produced

### Rolling 365-Day Average

Compliance with the Long-Term NO<sub>x</sub> Limit shall be based on a rolling 365-day average (rolled daily). For the purposes of calculating the 365-day average NO<sub>x</sub> emission rate each calendar day at each Covered Nitric Acid Plant, Terra will maintain an array of the mass emissions (lb/day) of NO<sub>x</sub> (calculated using Equation 2) and the 100% Nitric Acid Produced for that day (tons/day) and the preceding 364 days. Each subsequent day, the data from that day will be added to the array, and the data from the oldest day will be excluded.

For the purposes of calculating daily mass emission rate, the CEMS will maintain an array of each one-minute measurement of the NO<sub>x</sub> concentration (ppmvd) at the exit stack and each one-minute measurement of volumetric flow rate (DSCFM) of the exit stack over each day. In the event that one or more of the CEMS and stack flowmeter is/are not available, Terra will use the backup monitoring procedure, specified above, to fill in the data gaps.

Following each calendar day, the daily NO<sub>x</sub> mass emissions will be calculated using Equation 2.

#### Equation 2:

$$M_{NO_x Day} = 1.193 \times 10^{-7} \cdot \sum_{i=1}^n Q_{Stack i} \cdot C_{NO_x i}$$

Where:

$C_{NO_x i}$  = One-minute measurement of stack NO<sub>x</sub> concentration, ppmvd, at interval “i”

$Q_{Stack i}$  = One-minute measurement of stack volumetric flow rate, DSCFM, at interval “i”

$1.193 \times 10^{-7}$  = Conversion factor in units of pounds per standard cubic foot (lb/SCF) NO<sub>x</sub> per ppm

$M_{NO_x Day}$  = Mass emissions of NO<sub>x</sub> during a calendar day, lb

$n$  = Number of minutes of Operating Period in a calendar day

Following each calendar day, the NO<sub>x</sub> emission rate as lb/ton, averaged over a rolling 365-day period ( $E_{365-Day Avg}$ ) will be calculated using Equation 3.

#### Equation 3:

$$E_{365-Day Avg} = \frac{\sum_{d=1}^{365} M_{NO_x Day d}}{\sum_{d=1}^{365} P_d}$$

Where:

$$\begin{aligned} M_{NO_x \text{ Day } d} &= \text{Mass emissions of NO}_x \text{ during a calendar day "d", lb} \\ P_d &= 100\% \text{ Nitric Acid Produced during a calendar day "d", tons} \\ E_{365\text{-Day Avg}} &= 365\text{-day rolling average lb NO}_x \text{ per ton of 100\% Nitric Acid Produced} \end{aligned}$$

### **Rounding of Numbers resulting from Calculations**

Upon completion of the calculations, the final numbers shall be rounded as follows:

$E_{3hravg}$  : Rounded to the nearest tenth.

$E_{365\text{-Day Avg}}$  : Rounded to the nearest hundredth.

The numbers "5"- "9" shall be rounded up, and the numbers "1"- "4" shall be rounded down. Thus, "1.05" shall be rounded to "1.1", and "1.04" shall be rounded to "1.0".

### **Compliance with Consent Decree NO<sub>x</sub> Limits**

#### Short-Term NO<sub>x</sub> Limits

The Short-Term NO<sub>x</sub> Limits do not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at a Covered Nitric Acid Plant, Terra will be in compliance with the Short-Term NO<sub>x</sub> Limit specified in the Consent Decree if  $E_{3hravg}$  does not exceed 1.0 lb

of NO<sub>x</sub> per ton of 100% Nitric Acid Produced. If Terra contends that any 3-hour rolling average emission rate is in excess of 1.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period, Terra shall recalculate  $E_{3hravg}$  to exclude measurements

recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a Covered Nitric Acid Plant would have been in compliance with the Short-Term Limit if the appropriate performance test or compliance procedure had been performed.

#### NSPS NO<sub>x</sub> Limits

The NSPS NO<sub>x</sub> Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at a Covered Nitric Acid Plant, Terra will be in compliance with the NSPS Limit if  $E_{3hravg}$  does not exceed 3.0 lb of NO<sub>x</sub> per ton of 100% Nitric Acid

Produced. If Terra contends that any 3-hour rolling average emission rate is in excess of 3.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period,

Terra shall recalculate  $E_{3hravg}$  to exclude measurements recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a Covered Nitric Acid Plant would have been in compliance with the NSPS NO<sub>x</sub> Limit if the appropriate performance test or compliance procedure had been performed.

### Long-Term NO<sub>x</sub> Limits

Terra will be in compliance with the Long-Term NO<sub>x</sub> Limit specified in the Consent Decree if  $E_{365-Day Avg}$  does not exceed 0.60 lb of NO<sub>x</sub> per ton of 100% Nitric Acid Produced. The Long-

Term NO<sub>x</sub> Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction.

### **Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction**

Terra will retain all data generated by the NO<sub>x</sub> analyzer and stack flowmeter, including all data generated during Startup, Shutdown, and/or Malfunction (“SSM”) at each Covered Nitric Acid Plant in accordance with Section XI of the Consent Decree.

### **Analyzer Specifications**

The NO<sub>x</sub> stack analyzers and the stack flowmeter required under this CEMS Plan at each Covered Nitric Acid Plant will meet the following specifications:

**Table 1**

<b>Analyzer</b>	<b>Parameter</b>	<b>Location</b>	<b>Range/Span Value</b>
NO <sub>x</sub> Stack Analyzers	NO <sub>x</sub> , ppm by volume, dry basis	Stack	Dual range: Normal: 0 – 200 ppm NO <sub>x</sub> SSM: 0 – 5000 ppm NO <sub>x</sub>
Stack Flowmeter	Volumetric flow rate, SCFM	Stack	0 to 125% of the maximum expected volumetric flow rate

The NO<sub>x</sub> stack analyzers will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, 40 C.F.R. Part 60, Appendix B, Performance Specification 2, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1. It should be noted, however, that the daily drift test requirement at 40 C.F.R. § 60.13(d) and the requirements of Appendix F apply only to the normal range of the NO<sub>x</sub> stack analyzers. The SSM range of the NO<sub>x</sub> stack analyzers will be evaluated once each calendar quarter to verify accuracy.

The stack flowmeters will meet 40 C.F.R. Part 60, Appendix B, Performance Specification 6 and will be evaluated once each calendar quarter and during the RATA of the NO<sub>x</sub> stack analyzers to verify accuracy.

### **Compliance with the NSPS: 40 C.F.R. Part 60, Subpart G**

In addition to the requirements in this CEMS Plan, Terra also will comply with all of the requirements of the NSPS relating to monitoring at each Covered Nitric Acid Plant except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart G:

- The requirement at 40 C.F.R. § 60.73(a) that the NO<sub>x</sub> stack analyzers have a span value of 500 ppm. In lieu of this, Terra will utilize the span values specified in Table 1 of this CEMS Plan; and

The requirement at 40 C.F.R. § 60.73(a) that pollutant gas mixtures under Performance Specification 2 and for calibration checks under 40 C.F.R. § 60.13(d) be nitrogen dioxide (NO<sub>2</sub>). Terra will use calibration gases containing NO and/or NO<sub>2</sub> as appropriate to assure accuracy of the NO<sub>x</sub> stack analyzers except where verified reference cells are used in accordance with Performance Specification 2.