# Appendix A-5 Trademark Nitrogen



# FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center 2600 Blair Stone Road Tallahassee, FL 32399-2400 Ron DeSantis Governor

Jeanette Nuñez Lt. Governor

Shawn Hamilton Secretary

# PERMITTEE

Trademark Nitrogen, Inc. 1216 Old Hopewell Road Tampa, FL 33619

Authorized Representative: Matthew Parsons-Cohrs, Facility Engineer Air Permit No. 0570025-016-AC Permit Expires: December 31, 2023 Minor Air Construction Permit Trademark Nitrogen Plant New NO<sub>X</sub> Emission Limit

# PROJECT

This is the final air construction permit, which establishes a new nitrogen oxide  $(NO_x)$  emission limit on the Nitric Acid Plant. The proposed work will be conducted at the existing Trademark Nitrogen Plant, which is a nitrogen fertilizer production plant (Standard Industrial Classification No. 2873). This existing facility is in Hillsborough County at 1216 Old Hopewell Road in Tampa, Florida. The UTM coordinates are Zone 17, 367.3 kilometers (km) East, and 3092.6 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

# STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

Digitally signed by David Lyle Read Date: 2022.09.20 11:01:24 -04'00'

David Lyle Read, P.E., Environmental Administrator Permit Review Section Division of Air Resource Management

# CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. Matthew Parsons-Cohrs, Trademark Nitrogen, Inc.: <u>mparsonscohrs@trademarknitrogen.com</u>) Ms. Diana M. Lee, P.E., EPCHC: <u>lee@epchc.org</u> Ms. Melissa Madden, DEP SWD Office: <u>Melissa.Madden@FloridaDEP.gov</u> Ms. Amy Hilliard, DEP PRS: <u>Amv.Hilliard@FloridaDEP.gov</u>

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

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Digitally signed by Amy Hilliard Date: 2022.09.20 16:18:13 -04'00'

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# FACILITY DESCRIPTION

Trademark Nitrogen is a nitrogen fertilizer production plant, which is comprised of a nitric acid plant and an ammonium nitrate plant. The nitric acid plant operation consists of compressing and heating atmospheric air and mixing the air with hot ammonia. The mixture is passed through a catalyst to produce nitrogen oxides ( $NO_X$ ). The nitrogen oxides are then passed through a series of heat exchangers, coolers, and through a primary absorber where the oxides are absorbed in water to produce nitric acid. The remaining oxides are passed through a secondary absorber, which acts as a control device to reduce  $NO_X$  emissions, prior to the Selective Catalytic Reduction (SCR) unit that further reduces  $NO_X$ .

The ammonium nitrate plant produces ammonium nitrate ( $NH_4NO_3$ ) by neutralizing the nitric acid that is produced onsite with ammonia. The nitric acid is sprayed downward from a nozzle within the neutralizer while the anhydrous ammonia is sprayed upward, which causes mixing to take place. An approximately 76%  $NH_4NO_3$  liquid solution product is produced.

The facility also operates the following sources which are exempt from permitting pursuant to Rule 62-210.300(3)(b) F.A.C.: a urea handling operation; a magnesium nitrate solutions plant with a magnesium oxide silo; a bulk storage warehouse with railcar unloading of urea; and a truck loading and a bagging machine located in the warehouse.

Also, the facility has categorically exempt sources that include: a 6.7 MMBtu/hr Orr & Steambower natural gas fired boiler and 4.5 MMBtu/hr natural gas fired Kemco Systems, Inc., water heater, which are exempt pursuant to Rule 62-210.300(3)(a)34 F.A.C. The facility also operates a 350 kW, diesel fuel fired, Kohler emergency generator, which is categorically exempt in accordance with Rule 62-210.300(3)(a)35, F.A.C. However, the engine remains subject to 40 CFR 60, Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* because it was manufactured after April 1, 2006.

In addition to the above sources, the facility receives and loads various liquid fertilizers and liquid products used in the manufacture of liquid fertilizer. The products are stored in 92 tanks and include products such as liquid ammonium nitrate, nitric acid, various liquid fertilizer solutions, safety oil, scrap water, phosphoric acid, and anhydrous ammonia. The truck loading rack and the tanks are not considered significant sources of emissions since they handle liquid products that are not significant sources of regulated emissions.

The existing facility consists of the following emissions units (EU).

EU No. E		Emission Unit Description		
L	001	Nitric Acid Plant with Two Absorption Towers and SCR		
[	002	Ammonium Nitrate Plant		

### PROPOSED PROJECT

This permitting action will establish a  $NO_x$  emission limit on the Nitric Acid Plant. In particular, the Nitric Acid Plant shall mee a  $NO_x$  emission limit, expressed as  $NO_2$ , of 2.60 pounds (lb) per ton of nitric acid produced on a 30 consecutive operating days basis. This emission standard will apply at all times, including period of startup, shutdown, or malfunction.

This project will modify the following emissions units.

EU No.	Emission Unit Description
001	Nitric Acid Plant

### FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is not a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.

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- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility does operate units subject to the New Source Performance Standards (NSPS) of Title 40 Part 60 of the Code of Federal Regulations (40 CFR 60).

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- 1. <u>Permitting Authority</u>: The permitting authority for this project is the Permit Review Section in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Permit Review Section mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.
- 2. <u>Compliance Authority</u>: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Environmental Protection Commission of Hillsborough County (EPCHC) at: 3629 Queen Palm Dr., Tampa, Florida 33619. The Permitting Authority's telephone number is (813) 627-2600.
- 3. <u>Appendices</u>: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); and Appendix E (NSPS Subpart G Standards of Performance for Nitric Acid Plants).
- 4. <u>Applicable Regulations, Forms and Application Procedures</u>: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
- 5. <u>New or Additional Conditions</u>: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
- 6. <u>Modifications</u>: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
- 7. <u>Construction and Expiration</u>: The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]
- 8. <u>Application for Air Operating Permit</u>: Subsequent to any construction, reconstruction or modification of a facility or emissions unit authorized by an air construction permit, and either within 60 days of demonstration of compliance with the conditions of such air construction permit, or within 60 days of expiration of such an air construction permit, whichever occurs first, the owner or operator of such facility or emissions unit shall obtain an initial air operation permit or revision of an existing air operation permit, whichever is appropriate, in accordance with all applicable provisions of this chapter and Chapter 62-4, F.A.C. When the application for an initial air operation permit or revision of an existing air operation permit is timely and sufficient, this permit shall remain in effect until the initial or revision application has been finally acted upon by the Department. To apply for a non-Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.070(3), and Chapter 62-210, F.A.C.]

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# SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

# A. Nitric Acid Plant (EU 001)

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
001	Nitric Acid Plant

The nitric acid plant consists of two absorption towers (primary and secondary) that operate in series. The process consists of compressing and heating atmospheric air and mixing the air with hot ammonia. The mixture is passed through a catalyst to produce nitrogen oxides ( $NO_X$ ). The  $NO_X$  is then passed through a series of heat exchangers, coolers, and through a primary absorber where the oxides are absorbed in water to produce nitric acid. The remaining oxides are passed through the secondary absorber acting as a control device to reduce  $NO_X$  emissions prior to the Selective Catalytic Reduction (SCR) unit. The SCR unit converts  $NO_X$  to  $N_2$  and  $H_2O$  by mixing the tail gas with a small amount of ammonia then passing the mixture over a catalyst before being discharged out the stack. The following is a more detailed description of the nitric acid plant operation.

{Permitting Note: NOx emissions are controlled by process operating conditions and/or use of a Selective Catalytic Reduction (SCR) NO<sub>x</sub> abatement device. Startup, shutdown and malfunction allowance is three hours based on 40 CFR 60, Subpart G. This emissions unit is regulated under applicable portions of 40 CFR 60, Subpart A; and 40 CFR 60, Subpart G – Standards of Performance for Nitric Acid Plants, adopted and incorporated by reference into this permit.}

# NO<sub>X</sub> AND VE EMISSION LIMITS

1. <u>New and Current  $NO_X$  Emission Limits and VE Standard</u>: The below table contains the current and new  $NO_X$  emission limits and current visible emission (VE, Opacity) standard to which the EU is subject along with the effective date of each limit (new  $NO_X$  emission limit is yellow highlight):

Pollutant	Emission Limit	Compliance Method	Basis	Effective Date			
	3.0 lb/ton of 100% HNO <sub>3</sub> produced <sup>1,3</sup>	CEMS	3-hour	Effective Now			
NO <sub>X</sub>	2.60 lb/ton of 100% HNO3 produced <sup>2,3</sup>	<b>CEMS</b>	30-operating day average (See <b>Specific</b>	January 1, 2023			
VE	10 percent opacity	EPA Method 9	Condition 5) 	Effective Now			
1. Exclude	s startup, shutdown, and malfunction.						
2. Applicat	licable at all times, including period of startup, shutdown and malfunction.						
3. Expresse							

[Application No. 0570025-016-AC; and Rule 62-210.200(PTE) F.A.C; Excess Emissions SIP.]

### NO<sub>X</sub> EMISSION TESTING AND MONITORING

- 2. <u>General Emissions Monitoring Requirements</u>: The permittee shall install and operate a NO<sub>x</sub> CEMS that meets the emissions monitoring requirements of 40 CFR § 60.73. The permittee shall determine the hourly NO<sub>x</sub> emissions rate in pounds per ton of nitric acid production (tons/hr) shall calculate emissions in units of the applicable emissions limit (lb/ton of 100 percent acid produced). The permittee shall operate the monitoring system and report emissions during all operating periods including unit startup and shutdown, and malfunction. [Application No. 0570025-016-AC and 40 CFR § 60.73 and Rule 62-210.200(PTE), F.A.C.]
- 3. <u>NO<sub>X</sub> CEMS</u>: The permittee shall operate and maintain the NO<sub>X</sub> CEMS to measure gas concentration and subsequently determine mass emissions in accordance with 40 CFR § 60.73 (see Appendix E). [Application No. 0570025-016-AC and 40 CFR § 60.73 and Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

### EMISSIONS CACULATIONS

4. <u>Thirty Operating Day Rolling Average Emissions Rate</u>: The 30-operating day emission rate shall be calculated based on 30 consecutive operating days with the production being expressed as 100 percent nitric

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# SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### A. Nitric Acid Plant (EU 001)

acid. Compliance is determined by first summing the total pounds of  $NO_x$  emitted from the Nitric Acid Plant during an operating day and the previous 29 operating days; second, sum the total nitric acid production in tons during the operating day and the previous 29 operating days; and third, divide the total number of pounds of  $NO_x$  emitted during the 30 operating days by the production during the 30 operating days. An operating day is defined as any day (midnight to midnight) when the Nitric Acid Plant is operating. The permittee shall calculate the 30-operating day rolling average emissions rate in units of the applicable emissions standard (lb  $NO_x$ /ton 100 percent acid produced) at the end of each operating day using all of the quality assured hourly average CEMS data for the previous 30 operating days.

[Application No. 0570025-016-AC and Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

# RECORDKEEPING AND REPORTING

5. <u>Recordkeeping</u>: The permittee shall meet the following recordkeeping requirements:

(a) For the  $NO_x$  emissions rate, you must keep records for and results of the performance evaluations of the continuous emissions monitoring systems.

(b) You must maintain records of the following information for each day and for each 30 operating day period:

(1) Hours of operation.

- (2) Production rate of nitric acid, expressed as 100 percent nitric acid.
- (3) Daily and 30 operating day average  $NO_X$  emissions rate values.

(c) You must maintain records of the following time periods:

(1) Times when you were not in compliance with the emissions standards.

(2) Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> monitoring equipment.

(d) You must maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.

(e) You must maintain records of any modifications to CEMS which could affect the ability of the CEMS to comply with applicable performance specifications.

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- 6. <u>Reporting</u>: For each 30 operating day period where you were not in compliance with the emissions standard the following information must be reported within one (1) business day to the Department:
  - (a) Time period;
  - (b)  $NO_x$  emission rates (lb/ton of acid produced);
  - (c) Reasons for noncompliance with the emissions standard; and
  - (d) Description of corrective actions taken.

[Application No. 0570025-016-AC; Rule 62-4.160, F.A.C.]

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