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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **October 18, 2022**

TO: Phillip Fielder, P.E., Chief Engineer

THROUGH: Rick Groshong, Environmental Manager, Compliance and Enforcement

THROUGH: Eric L. Milligan, P.E., Manager, Engineering Section

THROUGH: Jian Yue, P.E., New Source Permits Section

FROM: David Schutz, P.E., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2018-0001-C (M-5)**
Terra International (Oklahoma), LLC
Woodward Nitric Acid, Ammonia, and Urea Production Facility
Updated Ammonia Emissions
Woodward, Woodward County, Oklahoma
Sec. 29 – T23N – R 21W
Two Miles West of Woodward on SH-15
Latitude 36.43840°N, Longitude 99.47146°W
FAC ID 1496

SECTION I. INTRODUCTION

Terra International (Oklahoma), LLC (Terra) has requested a construction permit for its Woodward nitric acid, ammonia, and urea production facility (SIC 2873 / NAICS 325311) in northwest Oklahoma. The facility is currently operating under Permit No. 2018-0001-TVR3 (M-4) issued April 6, 2021. The facility is a major source for Prevention of Significant Deterioration (PSD) and a major source of Hazardous Air Pollutants (HAPs).

The facility emits more than 100 TPY of a criteria pollutant and more than 10 TPY of a Title III toxic air pollutant and is subject to Title V permitting requirements. Emission units (EUs) have been arranged into Emission Unit Groups (EUGs). Natural gas is the primary fuel with the emission units operating continuously.

SECTION II. PROCESS DESCRIPTION

The facility operates process units which conduct the following operations:

- Natural gas desulfurization
- Catalytic steam reforming (hydrogen production)
- Carbon monoxide "shift" (to carbon dioxide)
- Carbon dioxide removal

- "Methanation" (conversion of carbon monoxide/carbon dioxide to methane)
- Ammonia synthesis ($3H_2 + N_2$ ---> $2NH_3$)
- Ammonia oxidation (nitric acid production)
- Ammonium nitrate production (neutralization of nitric acid with ammonia)
- Urea synthesis (reaction of CO_2 with ammonia)
- Urea-ammonium nitrate production
- Product storage and loading

Raw materials for production are natural gas and air. Natural gas must first be treated using desulfurizing beds to remove sulfur compounds which would otherwise poison catalysts.

Steam reforming is the process by which hydrogen gas is prepared. Steam (H_2O) is reacted with methane (CH_4) to form carbon dioxide (CO_2) and hydrogen (H_2). Hydrogen gas is used later to react with nitrogen gas to produce ammonia. The reformer is equipped with an 800 MMBTUH gas-fired heater. The reforming reaction is not 100% complete and CO_2 and CO must be removed before ammonia synthesis. First, air is added to the stream for oxidation of some of the natural gas feed, a reaction which depletes oxygen from the air feed, leaving primarily nitrogen. Heat is recovered from the stream as it exits the reactor, cooling the stream prior to purification. The stream leaving the reforming reaction is referred to as "synthesis gas" since it contains the nitrogen and hydrogen needed for ammonia synthesis.

Purification of the synthesis gas removes carbon monoxide, carbon dioxide, and steam. The high temperature "shift" reactor furthers the degree of completion of the reforming reaction. The system includes a low-temperature shift reactor used to convert carbon monoxide to carbon dioxide.

Water is condensed following the low-temperature shift reaction. The water formed by condensing steam absorbs ammonia. Some of the “process condensate” is returned to the primary reformer, while the rest is stripped for ammonia removal.

Carbon dioxide in synthesis gas is removed in a propylene carbonate absorber. Absorption solution is regenerated continuously. CO_2 stripped from this is used in urea production, recovered for sale, or vented.

The ammonia synthesis stream consists primarily of nitrogen and hydrogen with residual amounts of CO and CO_2. Ammonia synthesis is conducted in a high-temperature, high-pressure reactor. This reaction is also never 100% complete. The outlet stream is compressed and cooled for ammonia removal. Most of the gas stream is returned to the reactor, except for a purge stream which prevents buildup of inert gases (helium, argon, etc.). There is a step for hydrogen recovery prior to venting non-condensable gases to a boiler firebox.
Nitric acid is produced by catalytic oxidation of ammonia to nitric oxide. Nitric acid is produced in three steps: combustion of ammonia to nitric oxide (NO), oxidation of NO to nitrogen dioxide (NO_2) and its dimer, nitrogen tetroxide (N_2O_4), and absorption of these in water to form nitric acid. The ammonia to NO oxidation takes place at 1,640°F with a proprietary catalyst. Waste heat recovery cools the reactor stream before contacting it with water. Any NO_2 present is absorbed into the water as nitric acid, HNO_3. The facility also incorporates a “bleach air” step which uses

air to strip unreacted NO_2 dissolved in the acid. The term "bleach air" stems from removal of nitrogen compounds which discolor the nitric acid.

Urea-ammonium nitrate (UAN) is produced with urea ($CO(NH_2)_2$) and ammonium nitrate. Ammonia and carbon dioxide are reacted in a urea production unit to produce a urea solution, which is combined with ammonium nitrate prior to shipment.

Some of the ammonia and some of the nitric acid are reacted in an aqueous solution to produce ammonium nitrate, NH_4NO_3. This product is in a water solution. At the No. 1 UAN plant, a high-efficiency filter removes entrained droplets which contain ammonium nitrate; the new No. 2 UAN plant is equipped with a packed bed wet scrubber. The vapor stream is partially condensed, yielding a process condensate stream which is used in the nitric acid plant. The remainder of the stream is vented to the atmosphere.

Ammonia is stored in refrigerated storage tanks until shipped. The storage vessels are vented to a flare. Upset releases to the flare are mostly converted to nitrogen and water.

The facility includes five flares, the "Ammonia Process Emergency Flare," the "Storage Tank Emergency Flare," the "Non-Ammonia Process Emergency Flare", the "Storage-Loading Flare", and the "No. 2 UAN Plant Flare".

Although most of the steam needed in the process is made from waste heat recovery, the facility includes two gas-fired boilers.

The plant operates 24 hrs/day, 7 days/week, and 52 weeks/yr (8760 hrs/yr).

SECTION III. EQUIPMENT

Equipment Being Added to Permit

EUG 07 – Facility-wide Ammonia Emissions			
EU	**Equipment**	**Number of Items***	**Installed Date**
Plant complex	Facility-wide ammonia sources	38 pump seals	1975 / 2009
		3 compressor seals	
		1,364 gas/vapor valves	
		181 pressure relief valves	
		774 open-ended lines	
		1,879 flanges	
		10 sampling connections	
		Facility point source ammonia emissions	

*Component counts are estimates and may change as fugitive components are added or deleted. In addition to the fugitive leakage, there will be ammonia emissions from the following point sources:

- Process flare (Point 10313A in EUG-13A)
- Storage tanks emergency flare (Point 10313C in EUG-13A)
- Ammonia flare (Point 10313D in EUG-13C)
- No. 2 UAN Plant flare (Point 10320 in EUG-23)
- Ammonium nitrate neutralizers (Point 10305 in EUG-05 and Point 10318 in EUG-21)
- Process condensate strippers (Point 10306 in EUG-06)
- Born Boiler (Point 10301 in EUG-01)
- Nitric acid plants (Point 10304 in EUG-05 and Point 10319 in EUG-22)
- Urea tanks (EUG-08)

Existing Equipment

EUG 00 – Primary Reformer			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
10300	Foster-Wheeler Primary Reformer	800	1975

EUG 01 – Born Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
10301	Born Boiler	Short-term 450 Rated 310.4	1975

EUG 02 – Converter Start-Up Heater			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
10302	Petro-Chem heater	40.5	1975

EUG 03A – Utility Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
Utility Boiler	Gas-fired Boiler	178	2014

EUG 04 – No. 1 Nitric Acid Plant		
Emission Point	**EU Name/Model**	**Construction Date**
10304	D. M. Weatherly Nitric Acid Plant	1976

EUG 05 – Ammonium Nitrate Neutralizer		
Emission Point	**EU Name/Model**	**Construction Date**
10305	James Machine Works Ammonium Nitrate Neutralizer	1976

EUG 06 – Process Condensate Stripper / "Alpha Tank"		
Emission Point	**EU Name/Model**	**Construction Date**
10306	Process Condensate Stripper / "Alpha Tank"	1975

"Alpha Tank" refers to the manufacturer rather than the function.

EUG 08 – Urea Storage Tanks			
Emission Point	**EU Name/Model**	**Capacity**	**Construction Date**
10308	Urea Storage Tank	500 tons	1976
10325	Urea Loading Tank	100 tons	1976
10326	Urea Loading Tank	100 tons	1976
103022	Urea Storage Tank	5,500 tons	2009

EUG 12 was the "Nitric Acid Storage Tank." With revocation of OAC 242:100-41, this EUG no longer needs to be listed.

EUG 13A– Plant Flares, Non-NSPS		
Emission Point	**EU Name/Model**	**Construction Date**
10313A	Ammonia Process Emergency Flare	1975
10313C	Storage Tank Emergency Flare	1975 Modified 2021

EUG 13B– Plant Flare		
Emission Point	**EU Name/Model**	**Construction Date**
10313B	Non-Ammonia Process Emergency Flare	1975

EUG 13C– Storage Loading Flare		
Emission Point	**EU Name/Model**	**Construction Date**
10313D	Storage-Loading Flare	2014

EUG 15 – CO_2 Vent		
Emission Point	**EU Name/Model**	**Construction Date**
10315	CO_2 Vent	1975

EUG 16 – Gasoline Storage Tank			
Emission Point	**EU Name/Model**	**Gallons**	**Construction Date**
10316	Gasoline Tank	4,000	1990

EUG 18 – Existing Internal Combustion Engines Subject to NESHAP Subpart ZZZZ			
Emission Point	**EU Name/Model**	**Capacity**	**Construction Date**
Fire Pump	Cummins Model N-855-F	240 HP	1976
Surface Drain Diesel Pump	Detroit Diesel Model 1033700C	115 HP	1977

EUG 19 – Miscellaneous Insignificant Activities			
Emission Point	**EU Name/Model**	**Capacity**	**Construction Date**
I2	Ammonia Loading (trucks & railcars)	5,000 trucks/yr 3,500 railcars/yr	1976
I3	Plant Laboratory	--	1976
I4	UAN Tanks	86,800 bbl. 64,900 bbl.	1976 1978
I5	UAN Loading	400,000 tons/yr	1976
I6	Process Condensate Filter Regeneration	--	1976
I8	Propylene Carbonate Storage Tank	68,000 gallons	1976
I9	Diesel Storage Tank	4,326 gallons	1990
I10	Used Oil Tank	6,000 gallons	1976
I11	Triethylene Glycol	20,000 gallons	1976
I12	Aqua Ammonia	14,000 gallons	1976
I13	Triethylene Glycol Vent	--	1976
I14	Diesel Storage Tank	520 gallons	2013
I15	Diesel Storage Tank	500 gallons	1976
I16	Diesel Storage Tank	385 gallons	1976
I17	Kerosene Storage Tank	200 gallons	2013
I19	Two (2) Used Oil Tanks	1,000 gallons, each	2013
I20	Used Oil Tank	1,032 gallons	1976
I21	Used Oil Tanks	< 600 gallons each	Various
I22	Bulk Solvent Tank	550 gallons	1976
I23	Three (3) Aqua Ammonia Tanks	158,000 gallons, each	1994

EUG 20 – Emergency Engines Subject to NSPS Subpart IIII			
Emission Point	**EU Name/Model**	**Capacity**	**Construction Date**
Diesel Generator	Caterpillar C-15	780 HP	2007
10323	John Deere Model 6068HF485T Diesel Generator	315 HP	2010
10324	John Deere Model 6135H	528 HP	2013

EUG 21 – No. 2 UAN Plant		
Emission Point	**EU Name/Model**	**Construction Date**
10318	1,850 TPD UAN Plant	2009

EUG 22 – No. 2 Nitric Acid Plant		
Emission Point	**EU Name/Model**	**Construction Date**
10319	685 TPD Nitric Acid Plant	2009

EUG 23– UAN Plant Flare		
Emission Point	**EU Name/Model**	**Construction Date**
10320	UAN Plant Flare	2009

EUG 24– UAN Plant Cooling Tower		
Emission Point	**EU Name/Model**	**Construction Date**
10321	UAN Plant Cooling Tower	2009

SECTION IV. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application and listed in OAC 252:100-8, Appendix I, are listed below. Record keeping for activities indicated with "*" is listed in the Specific Conditions.

- Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). The facility includes numerous space heaters, which are considered "trivial activities." At times during maintenance or turnarounds, the facility may also bring on-site a temporary portable flare.

- * Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The gasoline storage tank (EUG 16) and diesel storage tank (EUG 19) are in this category.

- Gasoline and aircraft fuel handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards and standards in OAC 252:100-37-15, 39-30, 39-41, and 39-48. The facility operates several portable diesel/kerosene tanks in the capacity range of 50 to 500 gallons.

- Emissions from storage tanks constructed with a capacity of less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The 20,000-gallon triethylene glycol tank, 6,000 gallon used oil tank, 4,326 gallon diesel fuel tank, a 520 gallon diesel tank, a 500 gallon diesel tank, a 385 gallon diesel tank, a 200 gallon kerosene tank, two (2) 1,000 gallon used oil tanks, a 1,032 gallon used oil tank, a number of used oil tank with a capacity of <600 gallons each, and a 550 gallon bulk solvent tank are in this category.

- Two facility non-contact cooling towers are considered "trivial activities"; therefore recordkeeping will not be required in the Specific Conditions.

- Lube oil, seal oil, or hydraulic fluid storage tanks and equipment do not emit VOCs or HAPs and are considered "trivial activities," therefore recordkeeping will not be required in the Specific Conditions.

- Cold degreasing operations utilizing solvents that are denser than air. These are part of the facility maintenance activities, which are actually "trivial activities," therefore recordkeeping will not be required in the Specific Conditions.

- * Non-commercial water washing operations and drum crushing operations (less than 2,250 barrels/year) of empty barrels less than or equal to 55 gallons with less than three percent by volume of residual material. The facility has equipment to wash and re-use drums, which would have emissions less than 5 TPY.

- Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrodes. These are part of the facility maintenance activities, which are actually "trivial activities," therefore recordkeeping will not be required in the Specific Conditions.

- Hazardous waste and hazardous materials drum staging areas. The facility includes a waste storage area.

- Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The plant laboratory is in this category, with emissions of 180 lb/year VOC.

- Hand wiping and spraying of solvents from containers with less than 1 liter capacity used for spot cleaning and/or degreasing in ozone attainment areas. These are part of the facility maintenance activities, which are actually "trivial activities," therefore recordkeeping will not be required in the Specific Conditions.

- * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant.

This last category includes a propylene carbonate tank, ammonia loading of trucks and railcars, UAN tanks, UAN loading of trucks and railcars, laboratory fume hoods, non-emergency releases during maintenance, aqua ammonia tanks, fuel tanks, a kerosene storage tank, and process condensate carbon filter regeneration. Since ammonia loading is between pressure vessels, and UAN loading is of aqueous solutions (neither of which rely on add-on controls), no records will be required to demonstrate that emissions are below 5 TPY.

SECTION V. POTENTIAL EMISSIONS

Emissions calculations were based on the following factors and procedures:

EUG NO.	EUG NAME	EMISSION UNIT DESCRIPTION	FACTOR REFERENCE
07	Facility-wide Ammonia Emissions	Fugitive ammonia emissions	"Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), component counts, and assumed 100 % ammonia concentration.
		Process flare (Point 10313A in EUG-13A)	Engineering calculations per event based on estimates of flow and gas stream composition to flare and 99% control. Flow and composition meters installation to be initiated in 2023 and completed in 2024.
		Storage tanks emergency flare (Point 10313C in EUG-13A)	Engineering calculations per event based on tank volume, pressure, and 98% control. Assumes 100% ammonia.
		Ammonia flare (Point 10313D in EUG-13C)	Engineering calculations per event based on estimated flow to flare, 98% control, and 100% ammonia.
		No. 2 UAN Plant flare (Point 10320 in EUG-23)	Engineering calculations per event from flow estimates from low pressure offgas and surge tanks' flow valves to the flare, 98% control, and 100% ammonia.
		Ammonium nitrate neutralizers (Point 10305 in EUG-05 and Point 10318 in EUG-21)	Engineering calculation of 0.16 lb/ton from stack test at Verdigris Plant and monthly production rate.
		Process condensate strippers (Point 10306 in EUG-06)	Monthly engineering calculations by mass balance between in-line flow meter readings and monthly Ion Specific Ammonia Probe concentration measurements.
		Born Boiler (Point 10301 in EUG-01)	Engineering calculations based on CEMS NOx associated with ammonia combustion and 98% control for purge gas; purgas rate measured by in-line flow meter.
		Nitric acid plants (Point 10304 in EUG-05 and Point 10319 in EUG-22)	Engineering calculations via CEMS units continuously monitored flows by in-line flow meters and CEMS ammonia concentration.
		Urea tanks (EUG-08)	Engineering calculations based on tank level, concentration of urea, and hydrolysis decomposition rate.

EUG NO.	EUG NAME	EMISSION UNIT DESCRIPTION	FACTOR REFERENCE
00	Primary Reformer	Primary Reformer	NOx: 0.2 lb/MMBTU (Subchapter 33 limit), 0.112 lb/MMBTU, hourly (stack testing + 35% safety factor) 0.087 lb/MMBTU, annual (stack testing + 5% safety factor) for post-project CO: AP-42 (7/98) plus 50% safety factor VOC: AP-42 (7/98) plus 25% safety factor PM: AP-42 (7/98) plus 25% safety factor SO_2: AP-42 (7/98) plus 50% safety factor
01	Born Boiler	Born Boiler	NOx: 0.2 lb/MMBTU (Subchapter 33 limit), 0.108 lb/MMBTU, hourly (stack testing + 35% safety factor) 0.084 lb/MMBTU, annual (stack testing + 5% safety factor) for post-project CO: AP-42 (7/98) VOC: AP-42 (7/98) plus 25% safety factor PM: AP-42 (7/98) plus 25% safety factor SO_2: AP-42 (7/98) plus 25% safety factor
02	Converter Start-up Heater	Converter Start-up Heater	NOx: AP-42 (7/98) plus 25% safety factor CO: AP-42 (7/98) plus 25% safety factor VOC: AP-42 (7/98) plus 25% safety factor PM: AP-42 (7/98) plus 25% safety factor SO_2: AP-42 (7/98) plus 25% safety factor

EUG NO.	EUG NAME	EMISSION UNIT DESCRIPTION	FACTOR REFERENCE
3A	New Utility Boiler (Normal Operations	178-MMBTUH Boiler (1,256 MMSCF/year gas fuel)	NOx: 0.030 lb/MMBTU (mfg data + 100% safety factor) CO: 0.075 lb/MMBTU (mfg data + 100% safety factor) VOC: 0.003 lb/MMBTU (mfg data + 100% safety factor) $PM/PM_{10}/PM_{2.5}$: 0.010 lb/MMBTU (mfg data + 100% safety factor) SO_2: 0.0010 lb/MMBTU (AP-42 (7/98) Section 1.4 + 100% safety factor) CO_2e: 116.6 lb/MMBTU (40 CFR Part 98 Subpart C)
	New Utility Boiler (Start-up and Shutdown)	178-MMBTUH Boiler (96 hours per year)	NOx: 0.2 lb/MMBTU (NSPS Subpart Db limit)
04	No. 1 Nitric Acid Plant	Nitric Acid Plant	1.0 lb/ton NOx hourly; 0.60 lb/ton annually (Consent Decree)
05	Ammonium Nitrate Neutralizer	Ammonium Nitrate Neutralizer	AP-42 (1/95) Section 8.3
06	Process Condensate Stripper	Process Condensate Stripper	Mass balance calculation
08	Urea Storage Tanks	Urea Storage Tanks	EPA “TANKS2”
13A, 13B	Plant Flares	Plant Flares	NOx: TCEQ Flare Guidance CO: AP-42 (2/18) Sec. 13.5 VOC: TCEQ Flare Guidance
13C	New Ammonia Flare	Flare	TCEQ Flare Guidance (NOx 0.064 lb/MMBTU and 11.1 lb/ton ammonia; CO, 0.37 lb/MMBTU; VOC, 0.046 lb/MMBTU) with 25% safety factor added to emission calculations
15	CO_2 Vent	CO_2 Vent	stack testing and sampling and laboratory gas chromatograph analysis
16	Gasoline Storage Tank	Gasoline Storage Tank	EPA “TANKS4.09”
18	Existing Internal Combustion Engines Subject to NESHAP Subpart ZZZZ	Fire Pump Surface Drain Pump	AP-42 (10/96) Section 3.3

EUG NO.	EUG NAME	EMISSION UNIT DESCRIPTION	FACTOR REFERENCE
19	Miscellaneous Insignificant Activities	Ammonia Loading	mass balance (vent pipe displacement)
		Plant Laboratory	mass balance
		UAN Tanks	mass balance
		UAN Loading	mass balance
		Process Condensate Filter Regeneration	mass balance (incoming vs. outgoing condensate)
		Propylene Carbonate Storage Tank	EPA "TANKS4.09"
		Diesel Storage Tank	EPA "TANKS4.09"
		Used Oil Storage Tanks	EPA "TANKS4.09"
		Triethylene Glycol Storage Tank	EPA "TANKS4.09"
		Kerosene Storage Tanks	EPA "TANKS4.09"
		Aqua Ammonia Tanks	mass balance
		Triethylene Glycol Vent	mass balance
		Bulk Solvent Tank	EPA "TANKS4.09"
		Nitric Acid Tanks	mass balance
20	Emergency Generator	780-hp Emergency Generator Diesel Engine	Manufacturer data
	Emergency Generator	315-Hp Diesel Engine	Manufacturer data
	Emergency Generator	538-Hp Diesel Engine	NSPS Subpart IIII limits
21	No. 2 UAN Plant	1,850 TPD as 32% UAN	CO: 0.10 lb/ton (from similar facility) PM_{10}: 1.5 lb/hr (manufacturer guarantee)
22	No. 2 Nitric Acid Plant	685 TPD as 100% HNO_3	1.0 lb/ton short-term 0.60 lb/ton annual
23	UAN Plant Flare	0.2 MMBTUH pilot flame 240,000 SCFH gas assist 21.31 TPH ammonia max	NOx: 11.1 lb/ton ammonia, CO 0.37 lb/MMBTU, VOC 0.046 lb/MMBTU, "TCEQ Air Permit Technical Guidance for Flares and Vapor Oxidizers" (10/2000)

A. Equipment Being Added to Permit

EUG 07 – Facility-wide Ammonia Emissions			
Emission Point	**EU Name/Model**	**Ammonia**	
		lb/hr	**TPY**
Plant Complex	Plant Complex	1329.76	1093.41

B. Existing Equipment

EUG 00 – Primary Reformer										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr***	**TPY**	**lb/hr***	**TPY**
Primary Reformer	7.5	32.6	0.7	3.1	89.6	305.4	5.4	23.6	98.8	432.9

* Based on a 24-hour average as originally allowed in Permit No. 97-245-C (PSD)(M-4).

EUG 01 – Born Boiler										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr***	**TPY**	**lb/hr***	**TPY**
Born Boiler	4.19	11.9	0.33	0.9	48.6	114.2	3.03	8.4	37.06	90.0

* Based on a 24-hour average.

EUG 02 – Converter Start-Up Heater										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Start-up Converter Heater	0.38	0.07	0.03	0.01	4.96	0.96	0.27	0.05	4.05	0.81

EUG 03a – New Utility Boiler										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr***	**TPY**
Utility Boiler	1.78	6.41	0.21	0.75	35.6	20.94	0.53	1.92	13.35	48.06

*24-hour average.

EUG 04 – No. 1 Nitric Acid Plant			
Emission Point	**EU Name/Model**	**NOx**	
		lb/hr *	**TPY**
10304	D. M. Weatherly Nitric Acid Plant	17.5	46.0

* Hourly limits based on 1.0 lb/ton, annual limits based on 0.60 lb/ton.

EUG 05 – Ammonium Nitrate Neutralizer			
Emission Point	**EU Name/Model**	**PM_{10} / $PM_{2.5}$**	
		lb/hr	**TPY**
10305	James Machine Works Ammonium Nitrate Neutralizer	31.9	139.7

EUG 06 – Process Condensate Stripper / Alpha Tank			
Emission Point	**EU Name/Model**	**VOC**	
		lb/hr*	**TPY**
10306	Process Condensate Stripper / Alpha Tank	81.8	358.3

* Based on a monthly average.

EUG 08 – Urea Storage Tanks			
Emission Point	**EU Name/Model**	**VOC**	
		lb/hr	**TPY**
10308	Urea Storage Tanks	0.01	0.1

EUG 13A– Plant Flares, Non-NSPS										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
10313A Ammonia Process Emergency Flare	--	--	--	--	521.2	25.2	97.3	4.83	785.74	39.02
10313C Storage Tank Emergency Flare	--	--	--	--	44.1	2.16	0.14	0.04	0.93	0.24
TOTALS	**--**	**--**	**--**	**--**	**565.3**	**27.36**	**97.44**	**4.87**	**786.67**	**39.26**

EUG 13B – Plant Flare										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
10313B Non-Ammonia Process Emergency Flare	--	--	0.01	0.1	1216.1	58.6	227.1	11.1	1833.0	89.3

EUG 13C – Ammonia Flare										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
10313D Ammonia Flare	--	--	--	--	183.18	3.87	0.03	0.13	0.24	1.06

EUG 15 – CO_2 Vent			
Emission Point	**EU Name/Model**	**CO**	
		lb/hr	**TPY**
10315	CO_2 Vent	342.0	1498.0

EUG 16 – Gasoline Storage Tank			
Emission Point	**EU Name/Model**	**VOC**	
		lb/hr	**TPY**
10316	4,000 Gallon Gasoline Tank	0.32	1.41

EUG 18 – Existing Internal Combustion Engines Subject to NESHAP Subpart ZZZZ										
Emission Unit	**PM_{10}/ $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Fire pump	0.53	0.13	0.49	0.12	7.44	1.86	0.59	0.15	1.60	0.40
Surface drain diesel pump	0.25	0.06	0.24	0.06	3.57	0.89	0.28	0.07	0.77	0.19
TOTALS	**0.78**	**0.19**	**0.73**	**0.18**	**11.01**	**2.75**	**0.87**	**0.22**	**2.37**	**0.59**

EUG 19 – Miscellaneous Insignificant Activities			
Emission Point	**EU Name/Model**	**VOC**	
		lb/hr	**TPY**
I2	Ammonia loading (trucks & railcars)	--	--
I3	Plant laboratory	0.60	0.60
I4	UAN tanks	--	--
I5	UAN loading	--	--
I6	Process condensate filter regeneration	0.09	0.09
I7	Nitric Acid Tanks	--	--
I8	Propylene carbonate storage tank	0.09	0.09
I9	4,000-gallon Diesel storage tank	0.01	0.01
I10	6,000 gallon used oil tank	0.01	0.01
I11	Triethylene glycol tank	0.01	0.01
I12	Aqua ammonia tank	0.01	0.01
I13	Triethylene glycol vent	0.01	0.01
I14	520-gallon Diesel Storage Tank	0.01	0.01
I15	500-gallon Diesel Storage Tank	0.01	0.01
I16	385-gallon Diesel Storage Tank	0.01	0.01
I17	200-gallon Kerosene Storage Tank	0.01	0.01

Emission Point	EU Name/Model	VOC	
		lb/hr	TPY
I18	Two (2) 4,326-gallon Bulk Lube Oil Storage Tanks	0.01	0.01
I19	Two (2) 1,000 gallon Used Oil Storage Tanks	0.01	0.01
I20	1,032 gallon Used Oil Tank	0.01	0.01
I21	520 gallon Used Oil Tank	0.01	0.01
I22	Bulk Solvent Tank	0.01	0.01
TOTALS		**0.92**	**0.92**

EUG 20 – Emergency Engines Subject to NSPS Subpart IIII										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
780-HP Diesel Generator	0.03	0.01	0.32	0.08	9.94	2.48	0.02	0.01	0.67	0.17
315-HP Diesel Generator	0.06	0.01	0.13	0.03	1.95	0.49	0.01	0.01	0.31	0.08
538-HP Diesel Generator	0.18	0.04	1.10	0.28	3.56	0.89	0.12	0.03	3.07	0.77
TOTALS	**0.27**	**0.06**	**1.55**	**0.39**	**15.45**	**3.86**	**0.15**	**0.05**	**4.05**	**1.02**

EUG 21 – No. 2 UAN Plant					
Emission Point	**EU Name/Model**	**PM_{10} / $PM_{2.5}$**		**CO**	
		lb/hr	**TPY**	**lb/hr**	**TPY**
10318	1,850 TPD Plant	1.50	6.57	1.01	4.42

Emissions limits for this unit will be filterable plus condensable PM.

EUG 22 – No. 2 Nitric Acid Plant			
Emission Point	**EU Name/Model**	**NOx**	
		lb/hr *	**TPY**
10319	685 TPD Plant	28.54	75.01

*24-hour average.

EUG 23– No. 2 UAN Plant Flare										
Emission Unit	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
10320 240.2 MMBTUH Emergency Flare	--	--	--	--	252.25	21.25	11.23	0.98	90.65	7.93

EUG 24 – UAN Plant Cooling Tower			
Emission Point	**EU Name/Model**	**PM_{10} $PM_{2.5}$**	
		lb/hr	**TPY**
10321	24,000 GPM Cooling Tower	0.21	0.94

CRITERIA POLLUTANT EMISSIONS BY POINT

EUG	**Emission Unit**	**PM_{10} / $PM_{2.5}$**		**SO_2**		**NO_x**		**VOC**		**CO**	
		lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
00	Primary Reformer	7.5	32.6	0.7	3.1	89.6	305.4	5.4	23.6	98.8	432.9
01	Born Boiler	4.19	11.9	0.33	0.9	48.6	114.2	3.03	8.4	37.06	90.0
02	Start-up Converter Heater	0.38	0.07	0.03	0.01	4.96	0.96	0.27	0.05	4.05	0.81
03A	New Utility Boiler	1.78	6.41	0.21	0.75	5.34	20.93	0.53	1.92	13.35	48.06
04	No. 1 Nitric Acid Plant	--	--	--	--	17.5	46.0	--	--	--	--
05	NH_4NO_3 Neutralizer	31.9	139.7	--	--	--	--	--	--	--	--
06	Process Condensate Stripper	--	--	--	--	--	--	81.8	358.3	--	--
07	Facility NH_3	--	--	--	--	--	--	--	--	--	--
08	Urea Tanks	--	--	--	--	--	--	0.01	0.1	--	--
13A	NH_3 Flares	--	--	0.02	0.2	552.1	26.83	97.63	4.95	788.01	39.80
13B	Non-NH_3 Flare	--	--	0.01	0.1	1216.1	58.6	227.1	11.1	1833.0	89.3
13C	Ammonia Flare	--	--	--	--	183.18	3.87	0.03	0.13	0.34	1.06
15	CO_2 Vent	--	--	--	--	--	--	--	--	342.0	1498.0
16	Gasoline Tank	--	--	--	--	--	--	0.32	1.41	--	--
18	NESHAP ZZZZ Engines	0.78	0.19	0.73	0.18	11.01	2.75	0.87	0.22	2.37	0.59
19	Miscellaneous Insignificant			--	--	--	--	0.92	0.92	--	--
20	NSPS Subpart IIII Generators	0.27	0.06	1.55	0.39	15.45	3.86	0.15	0.05	4.05	1.02
21	No. 2 UAN Plant	1.50	6.57	--	--	--	--	--	--	1.01	4.42
22	No. 2 Nitric Acid Plant	--	--	--	--	28.54	75.01	--	--	--	--
23	No. 2 UAN Plant Flare	--	--	--	--	252.2	21.24	11.23	0.98	90.65	7.93
24	No. 2 UAN Plant Cooling Tower	0.21	0.94	--	--	--	--	--	--	--	--
TOTALS		**48.51**	**198.44**	**3.58**	**5.63**	**2424.58**	**679.65**	**429.29**	**412.13**	**3214.69**	**2213.89**

Facility greenhouse gas emissions were stated as a potential of 2,413,075 TPY.

There are 12 primary discharge points for air emissions at the facility tabulated following.

SIGNIFICANT DISCHARGE POINTS

Discharge Point	**Height Feet**	**Diameter Inches**	**Flow Rate ACFM**	**Temperature ºF**
Primary Reformer	92	60	196,193	260
Born Boiler	182	126	86,483	400
Converter Start-Up Heater	67	66	13,548	400
Utility Boiler	50	60	47,500	300
No. 1 Nitric Acid Plant	50	36	34,183	300

Discharge Point	Height Feet	Diameter Inches	Flow Rate ACFM	Temperature ºF
No. 1 Ammonium Nitrate Neutralizer	35	15	200	120
Process Condensate Stripper	92	60	19,613	260
Ammonia Flare	237	44	--	--
CO_2 Vent	180	10	1,931	22
No. 2 Nitric Acid Plant	125	42	60,738	287
No. 2 Ammonium Nitrate Neutralizer	45	16	1,895	179

SECTION VI. AIR QUALITY IMPACTS

An analysis of air quality impacts was conducted for issuance of Permit No. 97-245-C (PSD). For an area which is affected by emissions from a new major source or modification, an analysis of the existing air quality is required for those pollutants which are emitted in significant quantities.

TOXIC POLLUTANT IMPACTS*

Pollutant	CAS Number	Toxicity Class	Ambient Impacts, ug/m^3	MAAC ug/m^3
Ammonia	7664417	C	1,630	1,742

*Ammonia modeling was updated in 2009 using AERMOD and 2001-2005 met years.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Operating Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. Emission inventories were submitted, and fees paid for previous years as required.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities", or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission

units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emission limitations for all the sources are taken from the permit application, previous permit, and Consent Decree No. 11-4038.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
This subchapter is applicable to the several boilers and process heaters, but not to the flares. "Fuel-burning equipment" is defined as boilers, gas turbines, or other combustion devices and all appurtenances thereto used to convert fuel or waste into useable heat or power. The flares do not provide any useable heat or power and, therefore, do not meet the definition of fuel-burning equipment. Subchapter 19 specifies PM emissions limitations based on heat input capacity. The following table lists applicable standards by unit and anticipated PM emissions. For most of the combustion devices, applicable permit limitations are more stringent than Subchapter 19.

COMPARISON OF PM EMISSIONS TO LIMITATIONS OF OAC 252:100-19

Unit	Heat Input Capacity, MMBTUH	PM Emission Limitation of OAC 252:100-19, lb/MMBTU	Anticipated PM Emission Rate, lb/MMBTU
Primary Reformer	800	0.21	0.0095
Born Boiler	310.4	0.26	0.0095
Converter Start-up Heater	18.46	0.52	0.0095
New Utility Boiler	178	0.22	0.010
Fire Pump Engine	<10	0.60	0.31
Surface Drain Engine	<10	0.60	0.31

Unit	Heat Input Capacity, MMBTUH	PM Emission Limitation of OAC 252:100-19, lb/MMBTU	Anticipated PM Emission Rate, lb/MMBTU
Emergency Generator (780 Hp)	<10	0.60	0.10
Emergency Generator (315 Hp)	<10	0.60	0.31
Emergency Generator (528 Hp)	<10	0.60	0.31

Subchapter 19 also limits emissions of particulate matter from processes other than fuel-burning equipment based upon their process weight rates. The emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P), for process rates above 60,000 lb/hr the formula in appendix G is ($E = 55.0*P^{0.11} - 40$). Based on a process rate of 77.1 TPH at the No. 2 UAN Plant, the allowable PM emission rate is 48.7 lb/hr. The expected emission rate (1.5 lb/hr) is in compliance with this limit. For the Ammonium Nitrate Neutralizer, based on a process rate of 24.1 TPH, the allowable PM emission rate is 34.6 lb/hr. The expected emission rate (31.9 lb/hr) is in compliance with this limit.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. When burning natural gas, the fuel-burning equipment has very little possibility of exceeding opacity standards, therefore no periodic observation is necessary.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or windborne without taking "reasonable precautions" to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Plant roads are paved, minimizing fugitive dust emissions. All streams at the facility are liquid or gaseous phase, which precludes generation of fugitive dust. Under normal operating conditions, this facility will not cause a problem in this area, therefore it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000 BTU/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. The permit requires the use of pipeline-grade natural gas to ensure compliance with Subchapter 31 for all units except the Born Boiler and emergency generator. The Born Boiler's fuel will include process off-gases whose sulfur contents are in the non-detectable range. The emergency generator is subject to a limitation of NSPS Subpart IIII of 500 ppm sulfur in diesel fuel, which is equivalent to 0.05 lb/MMBTU. For liquid fuels, the limitation of Subchapter 31 is 0.8 lb/MMBTU.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
Subchapter 33 affects new fuel-burning equipment with a rated heat input of 50 MMBTUH or more. The following table compares expected NOx emissions from the plant fuel-burning equipment to the limitations of Subchapter 33.

COMPARISON OF NOx EMISSIONS TO LIMITATIONS OF OAC 252:100-33

Unit	Heat Input Capacity, MMBTUH	NOx Emission Limitation of OAC 252:100-33, lb/MMBTU	NOx Emission Rate, lb/MMBTU
New Utility Boiler	178	0.2	0.03
Born Boiler	450	0.2	0.13 *
Primary Reformer	800	0.2	0.08 *

* Stack test results September 2014.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this facility: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit, or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. This applies to the gasoline tank.
Part 3 requires VOC loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. With removal of the methanol loading operation, this requirement ceases to be applicable.
Part 5 limits the VOC content of coatings used in coating lines and operations. Any painting operation will involve maintenance coatings of buildings and equipment and emit less than 100 pounds per day of VOCs and so is exempt.
Part 7 requires fuel-burning and refuse-burning equipment to be cleaned, operated, and maintained to minimize emissions of VOC. The equipment at this location is subject to this requirement.
Part 7 also requires effluent water separators which receive water containing more than 200 gallons per day of any VOC to be equipped with vapor control devices. "Effluent water separator" means any tanks, box, sump, or other container in which any material compound floating on or entrained or contained in water entering such tank, box, sump or other container is physically separated and removed from such water prior to outfall, drainage, or recovery of such water." Here, methanol is dissolved in water, rather than floating on or being emulsified in water. The condensate stripper is therefore not among the types of units regulated by Part 7.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. The Primary Reformer (EUG-01), Born Boiler (EUG-02), Ammonium Nitrate Neutralizer (EUG-05), Process Condensate Stripper (EUG-06), and CO_2 Vent (EUG-16) all have emissions greater than 100 TPY and have either monitoring or stack testing requirements in the permit.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-7	Permits for Minor Sources	not in source category
OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-29	Fugitive Dust	no fugitive dust generated
OAC 252:100-35	Carbon Monoxide	not type of emission unit
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not type of emission unit

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]
The facility is a major source for PSD. Any future increases of emissions must be evaluated for PSD if they exceed a significance level (100 TPY CO, 40 TPY NO_x, 40 TPY SO_2, 40 TPY VOC, 25 TPY PM, 15 TPY PM_{10}, 0.6 TPY lead, or 75,000 TPY CO_2e).

NSPS, 40 CFR Part 60 [Subparts D, Db, G, VVa, and IIII Applicable]
Subpart A (General Provisions) specifies standards for flares used as control devices for affected facilities. Flares are limited to visible emissions for no more than 5 minutes in any two hours, and velocity specifications are stated based on heat input. However, 40 CFR §60.8(b)(4) allows waiving performance testing when the operator "has demonstrated by other means to the

Administrator's satisfaction that the affected facility is in compliance with the standard…." This waiver of compliance testing for the flare was granted in a Consent Order between Terra and ODEQ in 1996.

Subpart D (Steam Generating Units) affects boilers with a rated heat input above 250 MMBTUH. The Born Boiler has a capacity of 450 MMBTUH and commenced construction after August 17, 1971. Subpart D limits NOx emissions from burning natural gas fuel to 0.20 lb/MMBTU; there are no PM nor SO_2 standards applicable to natural gas fuel. If NOx emissions are greater than 0.14 lb/MMBTU, installation of a NOx CEMS is required. Stack testing conducted on September 18, 2014, showed NOx emissions of 0.13 lb/MMBTU, which is less than the monitoring exemption threshold. The permit will require compliance with the applicable requirements. The Primary Reformer is not a "steam generating unit."

In October 2017, the Born Boiler became subject to a Consent Order (Case No. 17-204). That consent order will require the temporary installation of a CEMS to monitor the stack for volumetric flowrate and concentration of NOx emissions. The facility will study the stack emissions via the CEMS for a 12–18-month period in order to quantify NOx emissions that occur during periodic regeneration of the dryers. The permit will require compliance with the applicable requirements.

Subpart Db, Industrial-Commercial-Institutional Steam Generating Units. This subpart affects industrial-commercial-institutional steam generating units with a design capacity greater than 100 MMBTUH heat input and which commenced construction or modification after June 19, 1984, and after February 28, 2005. Particulate and SO_2 standards are not set for gas-fired units. The NO_X emission standard for an affected facility that combusts only natural gas is 0.2 lb/MMBTU as a "high heat release rate unit" per §60.44b(a), including periods of start-up, shutdown, and malfunction (§60.44b(h)). Compliance with the NO_X standard is to be demonstrated on a rolling 30-day basis, except that the initial performance test shall demonstrate compliance on a 24-hour basis and any subsequent performance tests shall demonstrate compliance on a 3-hour basis (§60.44b (i & j)). The Primary Reformer and start-up heater are not "steam generating units," and the Born Boiler was constructed prior to June 19, 1984. The 178-MMBTUH utility boiler in EUG-3A is subject to Subpart Db.

Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units. This subpart affects steam generating units constructed after June 9, 1989, and with capacity between 10 and 100 MMBTUH and additional PM standards for affected facilities constructed after February 28, 2005. The two boilers were constructed prior to June 9, 1989.

Subpart G (Nitric Acid Plants) affects nitric acid plants that commenced construction, reconstruction, or modification after August 17, 1971, and on or before October 14, 2011. Both the No. 1 Nitric Acid Plant (constructed in 1975) and the No. 2 Nitric Acid Plant are subject to a NOx emissions limitation of 3.0 lb NOx expressed as NO_2 per ton nitric acid produced, expressed as 100% HNO_3. Subpart G requires maintenance of CEMS measuring NOx emissions. The permit will require compliance with the applicable requirements. A more stringent limitation was required for the No. 2 Nitric Acid Plant for "netting out" of PSD.

Subpart Ga (Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011) regulates nitric acid plants that commenced construction, reconstruction, or modification after October 14, 2011. The nitric acid plants have not been modified or reconstructed after October 14, 2011.

Subpart K (Petroleum Liquids Storage Vessels) affects petroleum liquids storage vessels which commenced construction, reconstruction, or modification between June 11, 1973, and May 19, 1978; which have a capacity of 40,000 gallons or more; and which contain petroleum liquids.

"Petroleum liquids" are defined as "petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean No. 2 through 6 fuel oils.…" The urea and propylene carbonate storage tanks were constructed during the time period when Subpart K was in effect, but these materials do not meet the definition of "petroleum liquid."

Subpart Kb (Volatile Organic Liquids Storage Vessels) affects volatile organic materials storage tanks with a capacity above 19,813 gallons which commenced construction, reconstruction, or modification after July 23, 1984. With removal of the methanol plant and associated equipment and storage, this regulation ceased to be applicable.

Subpart VV (VOC Leaks in the Synthetic Organic Chemical Manufacturing Industry) affects synthetic organic chemical manufacturing operations which commenced construction, reconstruction, or modification after January 5, 1981, and on or before November 6, 2006. For the No. 2 Urea Plant, the BID for Subpart VV responded to comments about the low vapor pressure of urea, stating only those processes which use formaldehyde would be subject to Subpart VV. With removal of the methanol plant and associated equipment and storage, this regulation ceased to be applicable.

Subpart VVa (Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry) affects equipment constructed, reconstructed, or modified after November 7, 2006. NSPS, Subpart VVa requires equipment constructed, reconstructed, or modified after November 7, 2006, in VOC service to comply with paragraphs §§ 60.482-1a through 60.482-10a, §60.484a, §60.485a, §60.486a, and §60.487a except as provided in § 60.593a. The primary differences between Subparts VV and VVa are in leak definitions. The No. 2 Urea Plant is subject to Subpart VVa.

Subpart NNN (SOCMI Distillation Units) affects distillation units in the synthetic organic chemical manufacturing industry, requiring that total organic carbon (TOC) from distillation columns be reduced by 98% in a combustion device, such as a boiler or heater, or in a flare. With removal of the methanol plant and associated equipment and storage, this regulation ceased to be applicable.

Subpart RRR (SOCMI Reactor Processes) affects reactor processes which produce products, coproducts, or byproducts which are listed in 40 CFR §60.707. With removal of the methanol plant and associated equipment and storage, this regulation ceased to be applicable.

Subpart IIII, (Stationary Compression Ignition Internal Combustion Engines) affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Compliance with this subpart is required in this permit for the engines in EUG-20.

NESHAP, 40 CFR Part 61 [Not Applicable]

There are no emissions anticipated of any of the eight pollutants subject to regulation under 40 CFR Part 61: arsenic, asbestos, benzene, beryllium, coke oven emissions, radionuclides, mercury, or vinyl chloride.

NESHAP, 40 CFR Part 63 [Subparts ZZZZ and DDDDD Applicable]

Subpart EEEE, Organic Liquids Distribution (Non-Gasoline). This subpart affects organic liquid distribution (OLD) operations at major sources of HAPs with an organic liquid throughput greater than 7.29 million gallons per year (173,571 barrels/yr). Subpart EEEE provides that any facility which is also subject to Subpart FFFF may comply with Subpart FFFF instead. However, with removal of the methanol production operations, this regulation ceased to be applicable.

Subpart FFFF, Miscellaneous Organic Chemical Manufacturing, or MON. This subpart affects facilities that manufacture miscellaneous organic chemicals and that are located at major sources of HAP. Terra is a major source of HAP and is an affected facility per 40 CFR §63.2435(b)(1)(i). This MACT applies to MCPUs, or miscellaneous organic chemical manufacturing process units, which include assigned storage tanks, product transfer racks, open systems conveying wastewater-like material, and components, such as valves, connectors, etc. Work practice standards and limits are described for continuous process vents, batch process vents, storage tanks, transfer racks, equipment leaks, and wastewater streams, *inter alia*. However, with removal of the methanol production operations, this regulation ceased to be applicable.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects existing, new, and reconstructed spark ignition 4-stroke rich-burn (4SRB) RICE, new or reconstructed spark ignition 2-stroke lean-burn (2SLB) RICE, new or reconstructed 4-stroke lean-burn (4SLB) RICE, and new or reconstructed compression ignition (CI) RICE, with a site-rating greater than 500 brake horsepower, that are located at a major source of HAP emissions. The two existing emergency engines are smaller than 500-HP and must comply with the requirements in the following table. The new emergency engines are subject NSPS Subpart IIII and are not subject to any other requirements under this subpart.

Engine Category	**Normal Operation[1]**
Emergency and Black Start CI RICE	1. Change oil and filter every 50 hours of operation or annually, whichever comes first, and replace as necessary. 2. Inspect spark plugs every 1,000 hours of operation or annual, whichever comes first, and replace as necessary. 3. Inspect all belts and hoses every 50 hours of operation or annually, whichever comes first, and replace as necessary.

[1] During Startup - Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

Subpart DDDDD, Industrial, Commercial and Institutional Boilers and Process Heaters at major sources of HAPs. The boilers and process heaters in EUG-2, EUG-3A, and EUG-4 are all "units designed to burn gas-1 fuels" (natural gas and process off-gases not containing measurable sulfur compounds". EUG-2 is a limited use process heater subject to a 10% annual capacity factor limit. The following standards are specified for those units:

If your unit is . . .	You must meet the following . . .
1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater	Conduct a tune-up of the boiler or process heater every 5 years as specified in § 63.7540.
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater	Conduct a tune-up of the boiler or process heater annually as specified in § 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.
4. An existing boiler or process heater located at a major source facility, not including limited use units	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in § 63.7575:

The permit requires compliance with all applicable requirements.

Compliance Assurance Monitoring, 40 CFR Part 64 [Applicable]
Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.

- It has potential emissions, prior to the control device, of the applicable regulated air pollutant greater than major source levels.

Both nitric acid plants are subject to NSPS Subpart G. A selective catalytic reduction (SCR) control system was placed in operation in February 2005 for control of NOx for the No. 1 Plant, and upon installation of the No. 2 Plant. Both units' stacks are equipped with a continuous emissions monitoring system (CEMS) measuring NOx emissions in accordance with Subpart G. According to 40 CFR Part §64.2(b)(vi), units subject to the requirement to operate and maintain a CEMS are exempt from CAM requirements. Similarly, for the new Utility Boiler, NSPS Subpart Db requires CEMS, therefore, CAM is not applicable.

The No. 1 and No. 2 Plant Neutralizer system scrubbers are inherent to the process and therefore not a control device as defined in 40 CFR §64.1.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Applicable]
Ammonia, a toxic chemical subject to this regulation, and hydrogen and methane, flammable chemicals subject to this regulation, are present in the facility in quantities greater than the threshold quantities; therefore, Part 68 is applicable. A Risk Management Plan was submitted and updated as required and determined to be complete by EPA. More information on this federal program is available at the web site: http://www.epa.gov/rmp.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subparts A and F are Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).
Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.
Subpart F requires that any person's servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

The Standard Conditions of the permit address the requirements specified at §82.156 for persons opening appliances for maintenance, service, repair, or disposal; §82.158 for equipment used during the maintenance, service, repair, or disposal of appliances; §82.161 for certification by an approved technician certification program of persons performing maintenance, service, repair, or disposal of appliances; §82.166 for recordkeeping; § 82.158 for leak repair requirements; and §82.166 for refrigerant purchase records for appliances normally containing 50 or more pounds of refrigerant.

SECTION IX. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be Tier II based on the request for a construction permit for a significant modification to an existing major source. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page: www.deq.ok.gov/.

The applicant published the "Notice of Filing a Tier II Application" in the *Woodward News*, a daily newspaper circulated in Woodward County, on July 13, 2022. The notice stated that the application was available for public review at the Woodward Public Library or at the DEQ Air Quality Office in Oklahoma City. A draft of this permit will also be made available for public review for a period of thirty days as stated in another newspaper announcement. The facility is located within 50 miles of the border with the states of Kansas and Texas; those states will be notified of the draft permit. Tribal nations will be notified of the draft permits.

The applicant requested and was granted concurrent public and EPA review periods. As long as no comments are received from the public, the draft permit will be deemed the proposed permit. The "draft/proposed" permit will be submitted to EPA for a 45-day review period.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the property.

If the Administrator does not object in writing during the 45-day EPA review period, any person that meets the requirements of OAC 252:100-8-8(j) may petition the Administrator within 60 days after the expiration of the Administrator's 45-day review period to make such objection. Any such petition shall be based only on objections to the permit that the petitioner raised with reasonable specificity during the public comment period provided for in 27A O.S. § 2-14-302. A.2., unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under OAC 252:100-8-8(j), the DEQ shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the DEQ has issued a permit prior to receipt of an EPA objection under OAC 252:100-8-8(j), the DEQ will modify, terminate, or revoke such permit, and shall do so consistent with the procedures in 40 CFR §§ 70.7(g)(4) or (5)(i) and (ii) except in unusual circumstances. If the DEQ revokes the permit, it may thereafter issue only a revised permit

that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

Fee Paid

Part 70 construction permit fee of $5,000 ($4,500 paid on July 6, 2022, and $500 Applicability Determination fee)

SECTION X. SUMMARY

The facility has demonstrated the ability to comply with the requirements of the several air pollution control rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance and enforcement issues that would affect the issuance of this permit. Issuance of the construction permit is recommended, contingent on public and EPA review.

DRAFT / PROPOSED

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Terra International (Oklahoma), LLC **Permit No. 2018-0001-C (M-5)**
Woodward Nitric Acid, Ammonia, and UAN Plant

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on July 6, 2022. The Evaluation Memorandum dated October 18, 2022, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or continuing operations under this permit constitutes acceptance of, and consent to the conditions contained herein:

1. Points of emissions and emissions limitations for each point: [OAC 252:100-8-6(a)]

A. EUG 00 – Primary Reformer

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Primary Reformer	7.5	32.6	0.7	3.1	89.6	305.4	5.4	23.6	98.8	432.9

i. Compliance with the lb/hr emissions limitations for VOC and CO shall be based on a 24-hour averaging period.
ii. This unit shall be fueled with natural gas only.
iii. NOx emissions shall not exceed 0.2 lb/MMBTU. [OAC 252:100-33]
iv. The reformer is an affected facility under 40 CFR Part 63 Subpart DDDDD and shall comply with all applicable requirements including but not limited to: items 3 and 4 of Table 3 of Subpart DDDDD, performing annual tune-ups. An initial energy assessment was completed December 2015, as required.

B. EUG 01 – Born Boiler

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Born Boiler	4.19	11.9	0.33	0.9	48.6	114.2	3.03	8.4	37.06	90.0

i. The Born Boiler is subject to NSPS Subpart D and shall comply with all applicable requirements including but not limited to: Emissions of NOx shall be limited to 0.2 lb/MMBTU except as allowed following. [40 CFR §60.44(a)(1)]
ii. Compliance with the lb/hr emissions limitations for VOC and CO shall be based on a 24-hour averaging period.

iii. Emissions of NOx resulting from regeneration of the dryers are not subject to compliance with the 0.20 lb/MMBTU NOx emission limit specified in Specific Condition 1(B)(i), as the oxidation of the resulting ammonia in the Born Boiler is for the purpose of controlling ammonia emissions as opposed to creating useful heat or power.

iv. Pursuant to Consent Order (Case No. 17-204), an emissions study shall be conducted to evaluate and quantify NOx emission from the Born Boiler resulting from regeneration of the dryers. The study will be conducted over a 12 to 18- month period using a temporary CEMS on the Born Boiler stack to continuously measure and record the volumetric flowrate and concentration of NOx emissions. The study will follow the criteria outlined in the consent order.

v. A written study report shall be submitted within sixty days following the end of the Study Period. The report shall contain the necessary information as outlined in the consent order.

vi. Following completion of the Study, the temporary CEMS will no longer be required and may be removed.

vii. An application to amend the permit may be submitted to resolve a noncompliance identified as a result of the study.

viii. Compliance with the lb/hr emissions limitations for VOC and CO shall be based on a 24-hour averaging period.

ix. The boiler is an affected facility under 40 CFR Part 63 Subpart DDDDD and shall comply with all applicable requirements including but not limited to: items 3 and 4 of Table 3 of Subpart DDDDD, performing annual tune-ups. An initial energy assessment was completed December 2015, as required.

C. EUG 02 – Converter Start-Up Heater

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Start-up Converter Heater	0.38	0.07	0.03	0.01	4.96	0.96	0.27	0.05	4.05	0.81

i. This unit shall be fueled with natural gas only.

ii. The heater is an affected facility under 40 CFR Part 63 Subpart DDDDD and shall comply with all applicable requirements including but not limited to: item 1 of Table 3 of Subpart DDDDD, performing a tune-up every 5 years.

iii. The unit is a limited use process heater as defined under 40 CFR Part 63, Subpart DDDDD and shall limit its annual capacity factor to no more than 10% based on a 12-month rolling total. The start-up heater annual heat input shall be limited to no more than 16,170 MMBTU in any 12-month period.

iv. Records of fuel used shall be kept for the days the heater is operating.

v. Should the unit no longer qualify as a limited use process heater, annual tune-ups shall be performed, and the Facility shall notify the department and request that the limit be removed.

D. EUG 03A –Utility Boiler

Emission Unit	PM_{10}		SO_2		NO_x *		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
178-MMBTUH Utility Boiler	1.78	6.41	0.21	0.75	5.34	20.93	0.53	1.92	13.35	48.06

*NOx hourly limits do not apply during periods of start-up and shutdown; emissions during those periods are authorized in Item "vi" below.

i. This unit shall be fueled with natural gas only. [OAC 252:100-8-6(a)]

ii. Fuel usage shall not exceed 1,256 MMSCF in any 12-month period, 12-month rolling total. [OAC 252:100-8-6(a)]

iii. Fuel consumption shall be monitored and recorded. Records of fuel usage shall be kept on at least a monthly basis. [OAC 252:100-43]

iv. The Utility Boiler is subject to NSPS, Subpart Db, and shall comply with all applicable requirements including but not limited to:

a. Emissions monitoring (40 CFR §60.47b and §60.48b): continuous monitoring of NO_X emissions.
b. Reporting and recordkeeping (40 CFR §60.49b): recordkeeping of daily fuel usage.
c. All CEMS shall be operated in accordance with the applicable procedures under the applicable Performance Specifications in Appendix B.

v. **Shutdown** means the cessation of operation of the boiler for any purpose. Shutdown begins either when none of the steam from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler, whichever occurs earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler. **Startup** means either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying steam or heat for heating and/or producing electricity or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam or heat from the boiler or process heater is supplied for heating and/or producing electricity or for any other purpose.

vi. Compliance with the mass emissions limits for NOx shall be based on a 24-hour average for the lb/hr limit and a 12-month rolling total for the annual limit. During periods of start-up and shutdown not to exceed 6 hours for start-up or 2 hours for shutdown, NOx emissions shall not exceed 0.2 lb/MMBTU. A total operating time of 96 hours per year in start-up or shutdown modes is authorized. Records of time in start-up or shutdown mode shall be kept. Start-up and shutdown hours that meet the lb/hr limit shall not be counted against the 96 hours per year limit.

vii. The boiler is equipped with a continuous oxygen trim system and is a new affected facility under 40 CFR Part 63 Subpart DDDDD and shall comply with all applicable requirements including but not limited to: item 2 of Table 3 of Subpart DDDDD, performing tune-ups every 5 years.

viii. Compliance with the CO lb/hr limitation shall be based on a 24-hour average.

E. EUG 04 – No. 1 Nitric Acid Plant

Emission Point	EU Name/Model	NOx	
		lb/hr	TPY
10304	D. M. Weatherly Nitric Acid Plant	17.5	46.0

i. The No. 1 Nitric Acid Plant is subject to 40 CFR Part 60 Subpart G and shall comply with all applicable requirements including but not limited to:

a. Except for periods of start-up, shutdown, and malfunction, the opacity of the vent shall be limited to 10 percent or less. [40 CFR §60.72(a)(2)]

b. Except for periods of start-up, shutdown, and malfunction, emissions of NOx shall be limited to 3.0 lb/ton nitric acid produced (with the production being expressed as 100 percent nitric acid). [40 CFR §60.72(a)(1)]

c. The operator shall operate continuous emissions monitor to measure NOx emissions from the unit. 40 CFR §60.73(a)]

d. The span of the NOx CEM may be 0 – 200 ppm during normal operation and 0 – 5,000 ppm during startups, shutdowns, and maintenance activities. The span of the flowrate monitor shall be 0 – 125% of the maximum expected volumetric flow rate. [Consent Decree 11-04038]

e. In the event of the NOx stack analyzer and/or flow rate monitor outage or out-of-control period, the following procedures shall be used to fill in gaps in information:

I. Periods less than 24-hours: the previous calendar day's averages shall be used.

II. Periods greater than 24-hours: stack gases shall be sampled for NOx concentrations at least every 3 hours using a portable analyzer, non-certified CEM, or other approved method; stack flows may be estimated using engineering judgment.

ii. Pursuant to Consent Decree No. 11-04038, emissions of NOx shall not exceed the following limits:

a. Short-term NOx limit of 1.0 lb/ton nitric acid produced (with the production being expressed as 100 percent nitric acid) based on a rolling 3-hour average (rolled hourly) excluding periods of start-up, shutdown, and malfunction.

b. Long-term NOx limit of 0.60 lb/ton nitric acid produced (with production being expressed as 100 percent nitric acid) based on a 365-day rolling average (rolled daily) including periods of start-up, shutdown, and malfunction.

c. Compliance with the short-term and long-term NOx limits shall be determined based on continuous emissions monitoring conducted in accordance with the CEMS Plan for NOx Emissions included as Attachment C of Consent Decree No. 11-04038. [Consent Decree No. 11-04038]

d. The above NOx emissions requirements applicable to each covered Nitric Acid Plant were established pursuant to a negotiated Consent Decree with EPA and shall not be relaxed without the approval of EPA and the applicable state.

[Consent Decree 11-04038]

F. EUG 05 – Ammonium Nitrate Neutralizer

Emission Point	EU Name/Model	PM_{10}	
		lb/hr	TPY
10305	James Machine Works Ammonium Nitrate Neutralizer	31.9	139.7

G. EUG 06 – Process Condensate Stripper / Alpha Tank

Emission Point	EU Name/Model	VOC	
		lb/hr	TPY
10306	Process Condensate Stripper / Alpha Tank	81.8	358.3

i. Compliance with the lb/hr emission limitation shall be determined on a monthly-average basis based on measurements of flow and VOC concentrations.
ii. At least once per month, the permittee shall measure VOC concentrations in the process condensate and calculate VOC emissions on a lb/hr basis from this unit.

H. EUG 07 – Facility-wide Ammonia Emissions

Emission Point	EU Name/Model	Ammonia	
		lb/hr	TPY
Plant complex	Plant complex	1329.76	1093.41

i. The emission limitations are applicable facility-wide and include fugitive ammonia emission sources (*e.g.,* pump seals, compressor seals, gas/vapor valves, pressure relief devices, open-ended lines, flanges, sampling connections, etc.) as well as point source ammonia emission sources (*e.g.*, Process Emergency Flares, Storage Tank Emergency Flare, Ammonia Flare, No. 2 UAN Plant Flare, Ammonium Nitrate Neutralizers, Process Condensate Stripper, Born Boiler, Nitric Acid Plants, Urea Tanks, etc.).
ii. Compliance with the lb/hr emission limitation shall be based on a 24-hour averaging period.
iii. Facility-wide ammonia emissions exceeding the emission limitations (including those associated with accidental releases and/or malfunctions) shall be reported in accordance with Subchapter 9.
iv. The facility-wide ammonia emission limitations are federally enforceable.

v. Compliance with the TPY emissions limits shall be determined on a 12-month rolling total basis using the default emissions calculation methodologies indicated in the table below and the monitored parameters. The given parameters shall be monitored continuously, daily, monthly, or on an event basis, as appropriate. Compliance methodologies:

Emissions Unit Description	**Default Emissions Calculation Methodologies**
Fugitive Ammonia Emissions	"Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), component counts, and assumed 100% ammonia concentration.
Process flare (Point 10313A in EUG-13A)	Engineering calculations per event based on estimates of flow and gas stream composition to flare assuming 99% control. Flow and composition meters installation to be initiated in 2023 and completed in 2024.
Storage tanks emergency flare (Point 10313C in EUG-13A)	Engineering calculations per event based on tank volume, pressure, and 98% control. Assumes 100% ammonia.
Ammonia flare (Point 10313D in EUG-13C)	Engineering calculations per event based on estimated flow to flare, 98% control, and 100% ammonia.
No. 2 UAN Plant flare (Point 10320 in EUG-23)	Engineering calculations per event from flow estimates from low pressure offgas and surge tanks' flow valves to the flare, 98% control, and 100% ammonia.
Ammonium nitrate neutralizers (Point 10305 in EUG-05 and Point 10318 in EUG-21)	Engineering calculation of 0.16 lb/ton from stack test at Verdigris Plant and monthly production rate.
Process condensate strippers (Point 10306 in EUG-06)	Monthly engineering calculations by mass balance between in-line flow meter readings and monthly Ion Specific Ammonia Probe concentration measurements.
Born Boiler (Point 10301 in EUG-01)	Engineering calculations based on CEMS NOx associated with ammonia combustion and 98% control for purge gas; purge gas rate measured by in-line flow meter.
Nitric acid plants (Point 10304 in EUG-05 and Point 10319 in EUG-22)	Engineering calculations via CEMS units continuously monitored flows by in-line flow meter and CEMS ammonia concentration.
Urea tanks (EUG-08)	Engineering calculations based on tank level (throughput), concentration of urea and hydrolysis decomposition rate.

I. EUG 08 – Urea Storage Tanks: The following equipment item is insignificant since emissions are less than 5 TPY.

Emission Point	EU Name/Model	Capacity	Construction Date
10308	Urea Storage Tank	500 tons	1976
10325	Urea Loading Tank	100 tons	1976
10326	Urea Loading Tank	100 tons	1976
10322	Urea Storage Tanks	5,500 tons	2009

J. EUG 13A – Plant Flares, Non-NSPS

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
10313A Ammonia Process Emergency Flare	--	--	--	--	521.2	25.2	97.3	4.8	785.7	39.0
10313C Storage Tank Emergency Flare	--	--	--	--	44.1	2.16	0.14	0.04	0.93	0.24

i. The Ammonia Process Emergency Flare and the Storage Tank Emergency Flare shall be continuously monitored for the presence of a pilot flame. [OAC 252:100-43]
ii. Records of when gases are routed to the emergency flares and the amount of ammonia routed to the flares shall be kept. [OAC 252:100-43]
iii. Compliance with the above limits shall be demonstrated from pilot gas usage and calculations of amounts of ammonia flared. [OAC 252:100-43]

K. EUG 13B – Plant Flare

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
10313B Non-Ammonia Process Emergency Flare	--	--	0.01	0.1	1216.1	58.6	227.1	11.1	1833.0	89.3

i. The non-ammonia process emergency flare shall be continuously monitored for the presence of a pilot flame. [OAC 252:100-43]
ii. Compliance with the above limits shall be demonstrated from pilot gas usage and calculations of amounts flared. [OAC 252:100-43]

L. EUG 13C – Storage - Loading Flare

Emission Unit	PM_{10}		SO_2		NO_x		VOC		CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
10313D Ammonia Flare	--	--	--	--	183.18	3.87	0.03	0.13	0.24	1.06

i. The ammonia flare shall be continuously monitored for the presence of a pilot flame. [OAC 252:100-43]

ii. Compliance with the above limits shall be demonstrated from pilot gas usage and calculations of amounts of ammonia flared. [OAC 252:100-43]

M. EUG 15 – CO_2 Vent

Emission Point	EU Name/Model	CO	
		lb/hr	TPY
10315	CO_2 Vent	342.0	1498.0

i. At least once per month except when CO_2 Vent gases are flared, the concentration of CO shall be determined by gas chromatograph and an average emission rate determined.

N. EUG 16 – Gasoline Storage Tank: The following equipment item is insignificant since emissions are less than 5 TPY.

Emission Point	EU Name/Model	Gallons	Construction Date
10316	Gasoline Tank	4,000	1990

i. The gasoline tank (EUG-16) shall be operated with a submerged fill pipe. [OAC 252:100-37-15(b)]

O. EUG 18 – Existing Internal Combustion Engines Subject to NESHAP Subpart ZZZZ

Emission Point	EU Name/Model	Capacity	Construction Date
Fire Pump	Cummins Model N-855-F	240 HP	1976
Surface Drain Diesel Pump	Detroit Diesel Model 1033700C	115 HP	1977

i. The owner/operator shall comply with all applicable requirements of the NESHAP: Reciprocating Internal Combustion Engines, Subpart ZZZZ, for each affected facility including but not limited to: [40 CFR §63.6580 through §63.6675]

What This Subpart Covers

a. § 63.6580 What is the purpose of subpart ZZZZ?
b. § 63.6585 Am I subject to this subpart?
c. § 63.6590 What parts of my plant does this subpart cover?
d. § 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

e. § 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

General Compliance Requirements

f. § 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

g. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
h. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?

Continuous Compliance Requirements

i. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

Notifications, Reports, and Records

j. § 63.6650 What reports must I submit and when?
k. § 63.6655 What records must I keep?
l. § 63.6660 In what form and how long must I keep my records?

Other Requirements and Information

m. § 63.6665 What parts of the General Provisions apply to me?
n. § 63.6670 Who implements and enforces this subpart?
o. § 63.6675 What definitions apply to this subpart?

P. EUG 19 – Miscellaneous Insignificant Activities: The following equipment items are insignificant since criteria pollutant emissions are less than 5 TPY.

Emission Point	EU Name/Model	Capacity	Construction Date
I2	Ammonia Loading (trucks & railcars)	5,000 trucks/yr 3,500 railcars/yr	1976
I3	Plant Laboratory	--	1976

Emission Point	EU Name/Model	Capacity	Construction Date
I4	UAN Tanks	86,800 bbl. 64,900 bbl.	1976 1978
I5	UAN Loading	400,000 tons/yr	1976
I6	Process Condensate Filter Regeneration	--	1976
I8	Propylene Carbonate Storage Tank	68,000 gallons	1976
I9	Diesel Storage Tank	4,326 gallons	1990
I10	Used Oil Tank	6,000 gallons	1976
I11	Triethylene Glycol	20,000 gallons	1976
I12	Aqua Ammonia	14,000 gallons	1976
I13	Triethylene Glycol Vent	--	1976
I14	Diesel Storage Tank	520 gallons	2013
I15	Diesel Storage Tank	500 gallons	1976
I16	Diesel Storage Tank	385 gallons	1976
I17	Kerosene Storage Tank	200 gallons	2013
I19	Two (2) Used Oil Tanks	1,000 gallons, each	2013
I20	Used Oil Tank	1,032 gallons	1976
I21	Used Oil Tanks	<600 gallons, each	Various
I22	Bulk Solvent Tank	550 gallons	1976
I23	Three (3) Aqua Ammonia Tanks	158,000 gallons	1994

Q. EUG 20 – New Emergency Engines Subject to NSPS Subpart IIII

Emission Point	EU Name/Model	Capacity	Construction Date
Diesel Generator	Caterpillar C-15	780 HP	2007
10323	John Deere Model 6068HF485T Diesel Generator	315 HP	2010
10324	John Deere Model 6135H	528 HP	2013

i. The above units shall be fueled with No. 2 diesel with a maximum sulfur content of 0.05% by weight. [OAC 252:100-31]

ii. Maintenance checks and readiness testing of the emergency generators is limited to 100 hours per year. Operation of the engines for up to 50 hours in non-emergency situations is allowed but will be counted towards the 100 hours per year provided for maintenance and readiness testing. There is no limit on operating the engines in emergency

situations. The emergency generators are subject to 40 CFR Part 60, Subpart IIII, and shall comply with all applicable requirements.

a. § 60.4200 Am I subject to this subpart?
b. § 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?
c. § 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
d. § 60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?
e. § 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
f. § 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?
g. § 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?
h. § 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?
i. § 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?
j. § 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?
k. § 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
l. §60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?
m. § 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?
n. § 60.4218 What parts of the General Provisions apply to me?
o. § 60.4219 What definitions apply to this subpart?

iii. Notification requirements of 40 CFR Part 63, Subpart ZZZZ, have been completed. [40 CFR § 63.6645(c) & (d)]

R. EUG 21 – No. 2 UAN Plant

Emission Point	EU Name/Model	PM_{10}*		CO	
		lb/hr	TPY	lb/hr	TPY
10318	1,850 TPD Plant	1.50	6.57	1.01	4.42

*Emissions limits for these units will be filterable plus condensable PM.

i. The No. 2 UAN Plant shall be operated with discharges to the atmosphere processed by a packed bed wet scrubber or an equivalent device which achieves 1.5 lb/hr of PM_{10} emissions or less.

ii. Compliance with the lb/hr emission limitation for PM_{10} shall be based on a 3-hour averaging period.

iii. The packed bed wet scrubber shall be operated with a pressure differential of at least 1.5 inches WC when processing discharges from the No. 2 UAN unit. The pressure differential shall be monitored and recorded at least once daily when operated. If the pressure differential is monitored more than once daily, a daily average of the pressure differential must be calculated for determining compliance.

S. EUG 22 - No. 2 Nitric Acid Plant

Emission Point	EU Name/Model	NOx	
		lb/hr	TPY
10319	685 TPD Plant	28.54	75.01

i. Compliance with the lb/hr emission limitation shall be based on a 24-hour averaging period. [OAC 252:100-8-6(a)]

ii. The facility shall operate a selective catalytic reduction system on the No. 2 Nitric Acid plant which achieves the following NOx emissions limits: 1.0 lb/ton 100% nitric acid (3-hour average) and 0.60 lb/ton, annual average. [OAC 252:100-8-6(a)]

iii. The Nitric Acid Plant is subject to 40 CFR Part 60 Subpart G and shall comply with all applicable requirements including but not limited to the listed applicable requirements. Pursuant to NSPS Subpart G, the permittee shall operate the New Nitric Acid Plant in the following manner:

1. Emissions of NOx shall be limited to 3.0 lb/ton nitric acid produced (with the production being expressed as 100 percent nitric acid). [40 CFR §60.72(a)(1)]
2. Except for periods of start-up, shutdown, and malfunction, the opacity of the vent shall be limited to 10 percent or less. [40 CFR §60.72(a)(2)]
3. The operator shall operate a continuous monitor to measure NOx emissions from the unit. [40 CFR §60.73(a)]

T. EUG 23 - No. 2 UAN Plant Flare

Emission Point	EU Name/Model	NOx		CO		VOC	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
10320	240.2 MMBTUH Flare	252.25	21.25	90.65	7.93	11.23	0.98

i. The flare shall be continuously monitored for the presence of a pilot flame. [OAC 252:100-43]

U. EUG 24 - No. 2 UAN Cooling Tower

Emission Point	EU Name/Model	PM_{10}*	
		lb/hr	TPY
10321	24,000 GPM Cooling Tower	0.21	0.94

*Emissions limits for this unit are filterable plus condensable PM.

i. The unit shall be constructed with drift eliminators or equivalent devices which reduce drift to 0.0007% or less. [OAC 252:100-8-6(a)]

2. Except for the Born Boiler (EUG-01), the emergency fire water pump, the diesel pump, and the new emergency generators, the fuel-burning equipment shall be fired with pipeline-grade natural gas. The Born Boiler shall be fueled with pipeline-grade natural gas and may be fueled with process off-gases. Compliance can be shown by the following methods: for pipeline-grade natural gas, a current gas company bill. Compliance shall be demonstrated at least once every calendar year. [OAC 252:100-31]

3. The permittee shall be authorized to operate the facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)]

4. At least once during the term of the TVR3 operating permit, and at other such times as directed by Air Quality, the permittee shall conduct performance testing on the Born Boiler (EUG-01) and Ammonium Nitrate Neutralizer (EUG-05) as follows and furnish a written report to Air Quality. Testing shall be conducted while the unit is being operated at least 90% of permitted hourly capacity. A sampling protocol and notification of testing date(s) shall be submitted at least 30 days in advance of commencement of testing. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality: [OAC 252:100-43]

Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Moisture in Stack Gases.
Method 7E: NOx Emissions from Stationary Sources (Born Boiler only).
Method 5: PM Emissions from Stationary Sources (Ammonium Nitrate Neutralizer only).
Method 202: Condensable PM from Stationary Sources (Ammonium Nitrate Neutralizer only).

If the Born Boiler uses a continuous emissions monitor for NOx, testing for that unit shall not be required.

5. At least once every two years, and at other such times as directed by Air Quality, the permittee shall conduct performance testing on the Primary Reformer (EUG-00) as follows and furnish a written report to Air Quality. Testing shall be conducted while the unit is being operated at least 90% of permitted hourly capacity. A sampling protocol and notification of testing date(s) shall be

submitted at least 30 days in advance of commencement of testing. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality: [OSC 252:100-43]

Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3. Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Moisture in Stack Gases.
Method 7E: NOx emissions from Stationary Sources.
Method 10: CO Emissions from Stationary Sources.

6. The following records shall be maintained on location for inspection by regulatory personnel. The required records shall be retained for a period of at least five (5) years following the dates of recording. [OAC 252:100-45; 40 CFR §60.73(c)]

A. Monitoring of NOx concentrations in exhausts from each Nitric Acid Plant (continuous).
B. NOx emissions on a lb/ton of 100% nitric acid from each Nitric Acid Plant (daily when operated).
C. The operator shall record and maintain the daily production rate and the hours of operation of each Nitric Acid Plant.
D. For the fuel(s) burned, the appropriate document(s) as described in Specific Condition No. 2.
E. Records as required by NESHAP, Subpart ZZZZ.
F. Records as required by NSPS, Subpart IIII.
G. Records of No. 2 UAN Plant packed bed scrubber pressure differentials (24-hour daily average when operated).
H. Records as required by NSPS Subpart Db.
I. Records of periods in start-up or shutdown mode for EUG-3.
J. Records as required by NESHAP, Subpart DDDDD.
K. NOx emissions (lb/ton nitric acid) from the No. 1 Nitric Acid Plant, 3-hour and 365-day rolling averages.
L. Records of usages and resultant emissions from the storage tank emergency flare, EU 10313C in EUG-13A.
M. Monthly records of ammonia emissions, including but not limited to fugitive leakage and discharges from listed point sources.
N. Determination of flow rates and compositions required to comply with Specific Condition 1.H. EUG 7.

7. The following records shall be maintained on-site to verify Insignificant Activities. All such records shall be made available to regulatory personnel upon request. These records shall be maintained for a period of at least five years after the time they are made. [OAC 252:100-8-6(a)]

A. Fuel dispensing to facility owned vehicles: annual throughput of gasoline
B. Throughputs of the propylene carbonate tank (monthly)

C. Process condensate filter regeneration VOC emissions (cumulative annual)
D. Number of drums washed for reclamation (annual)
E. For other activities that have potential emissions less than 5 TPY (actual); type of activity and the amount of emissions from the activity.
F. Tank capacities and contents for storage tanks constructed with a capacity of less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature.

8. No later than 30 days after each anniversary date of the original Title V operating permit (February 26, 2002), the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of the Title V operating permit. [OAC 252:100-8-6 (c)(5)(A) & (D)]

9. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility. [OAC 252:100-8-6(d)(2)]

A.	OAC 252:100-7	Minor Sources
B.	OAC 252:100-11	Alternative Emissions Reduction
D.	OAC 252:100-23	Cotton Gins
E.	OAC 252:100-24	Grain Elevators
F.	OAC 252:100-35	Carbon Monoxide
G.	OAC 252:100-39	Nonattainment Areas
H.	OAC 252:100-47	MSW Landfills
I.	40 CFR Part 64	Compliance Assurance Monitoring
J.	40 CFR Part 60 Subpart K	Petroleum Liquids Storage Vessels
K.	40 CFR Part 60 Subpart Kb	Volatile Organic Liquids Storage Vessels
L.	40 CFR Part 60 Subpart VV	SOCMI VOC Leaks
M.	40 CFR Part 60 Subpart VVa	SOCMI VOC Leaks
N.	40 CFR Part 60 Subpart KKK	On-Shore Natural Gas Processing Plants
O.	40 CFR Part 60 Subpart NNN	SOCMI Distillation Units
P.	40 CFR Part 60 Subpart RRR	SOCMI Reactor Processes
Q.	[Reserved]	
R	40 CFR Part 63 Subparts F, G, H	HON
S.	40 CFR Part 63 Subpart FFFF	MON
T.	40 CFR Part 63 Subpart Q	Cooling Towers
U.	40 CFR Part 63 Subpart MMM	Agricultural Chemicals
V.	40 CFR Part 63 Subpart EEEE	Organic Liquids Distribution

10. This facility is considered an existing Prevention of Significant Deterioration (PSD) facility. As such, the facility is subject to the provisions of OAC 252:100-8-36.2(c) for any project as defined therein. [OAC 252:100-8-36.2(c)]

Scott A. Thompson
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

Terra International (Oklahoma), LLC
Attn: Brian Flanagan, Environmental, Health, and Safety Manager
1000 Terra Drive
Woodward, OK 73801

Re: Permit Application No. 2018-0001-C (M-5)
Nitric Acid, Ammonia, and Urea Production Facility
FAC ID 1496
Woodward, Woodward County, Oklahoma

Dear Mr. Flanagan:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1st of every year. Any questions concerning the submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation in this matter. If we can be of further service, please contact our office at (405) 702-4100.

Sincerely,

DRAFT

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

Enclosure

PART 70 PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON STREET, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2018-0001-C (M-5)

Terra International (Oklahoma), LLC

having complied with the requirements of the law, is hereby granted permission to modify a nitric acid, ammonia, and urea plant in Sec. 29 – T 23N – R 21W at Woodward, Woodward County, Oklahoma subject to standard conditions dated June 21, 2016, and specific conditions, both attached

In the absence of commencement of construction, this permit shall expire 18 months from the issuance date, except as authorized under Section VIII of the Standard Conditions.

DRAFT

Division Director
Air Quality Division

Date

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
9-10-21

ACFM	Actual Cubic Feet per Minute
AD	Applicability Determination
AFRC	Air-to-Fuel Ratio Controller
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
BBL	Barrel(s)
BHP	Brake Horsepower (bhp)
BTU	British thermal unit (Btu)
C&E	Compliance and Enforcement
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstract Service
CAAA	Clean Air Act Amendments
CC	Catalytic Converter
CCR	Continuous Catalyst Regeneration
CD	Consent Decree
CEM	Continuous Emission Monitor
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CI	Compression Ignition
CNG	Compressed Natural Gas
CO	Carbon Monoxide or Consent Order
COA	Capable of Accommodating
COM	Continuous Opacity Monitor
D	Day
DEF	Diesel Exhaust Fluid
DG	Demand Growth
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)
EGU	Electric Generating Unit
EI	Emissions Inventory
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EUG	Emissions Unit Group
EUSGU	Electric Utility Steam Generating Unit
FCE	Full Compliance Evaluation
FCCU	Fluid Catalytic Cracking Unit
FIP	Federal Implementation Plan
FR	Federal Register
GACT	Generally Achievable Control Technology
GAL	Gallon (gal)
GDF	Gasoline Dispensing Facility
GEP	Good Engineering Practice
GHG	Greenhouse Gases
GR	Grain(s) (gr)
H_2CO	Formaldehyde
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbon
HFR	Horizontal Fixed Roof
HON	Hazardous Organic NESHAP
HP	Horsepower (hp)
HR	Hour (hr)
I&M	Inspection and Maintenance
IBR	Incorporation by Reference
ICE	Internal Combustion Engine
LAER	Lowest Achievable Emission Rate
LB	Pound(s) [Mass] (lb, lbs, lbm)
LB/HR	Pound(s) per Hour (lb/hr)
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
LT	Long Ton(s) (metric)
M	Thousand (Roman Numeral)
MAAC	Maximum Acceptable Ambient Concentration
MACT	Maximum Achievable Control Technology
MM	Prefix used for Million (Thousand-Thousand)
MMBTU	Million British Thermal Units (MMBtu)
MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
MMSCF	Million Standard Cubic Feet (MMscf)
MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
MWC	Municipal Waste Combustor
MWe	Megawatt Electrical
NA	Nonattainment
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NMHC	Non-methane Hydrocarbon
NGL	Natural Gas Liquids
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOI	Notice of Intent
NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
O&G	Oil and Gas

O&M	Operation and Maintenance
O&NG	Oil and Natural Gas
OAC	Oklahoma Administrative Code
OC	Oxidation Catalyst
PAH	Polycyclic Aromatic Hydrocarbons
PAE	Projected Actual Emissions
PAL	Plant-wide Applicability Limit
Pb	Lead
PBR	Permit by Rule
PCB	Polychlorinated Biphenyls
PCE	Partial Compliance Evaluation
PEA	Portable Emissions Analyzer
PFAS	Per- and Polyfluoroalkyl Substance
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers
PM_{10}	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers
POM	Particulate Organic Matter or Polycyclic Organic Matter
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million Volume
ppmvd	Parts per Million Dry Volume
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
psia	Pounds per Square Inch Absolute
psig	Pounds per Square Inch Gage
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RAP	Regulated Air Pollutant or Reclaimed Asphalt Pavement
RFG	Refinery Fuel Gas
RICE	Reciprocating Internal Combustion Engine
RO	Responsible Official
ROAT	Regional Office at Tulsa
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SCF	Standard Cubic Foot
SCFD	Standard Cubic Feet per Day
SCFM	Standard Cubic Feet per Minute
SCR	Selective Catalytic Reduction
SER	Significant Emission Rate
SI	Spark Ignition
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SNCR	Selective Non-Catalytic Reduction
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SOP	Standard Operating Procedure
SRU	Sulfur Recovery Unit
T	Tons
TAC	Toxic Air Contaminant
TEG	Triethylene Glycol
THC	Total Hydrocarbons
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulates
TV	Title V of the Federal Clean Air Act
$\mu g/m^3$	Micrograms per Cubic Meter
US EPA	U. S. Environmental Protection Agency
VFR	Vertical Fixed Roof
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VOL	Volatile Organic Liquid
VRT	Vapor Recovery Tower
VRU	Vapor Recovery Unit
YR	Year
2SLB	2-Stroke Lean Burn
4SLB	4-Stroke Lean Burn
4SRB	4-Stroke Rich Burn

MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(June 21, 2016)

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.
[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements.
[OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

(1) the date, place and time of sampling or measurement;
(2) the date or dates analyses were performed;
(3) the company or entity which performed the analyses;
(4) the analytical techniques or methods used;
(5) the results of such analyses; and
(6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report. [OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting of Deviations From Permit Terms) of these standard conditions. [OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act. [OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards ("NSPS") under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants ("NESHAPs") under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made, and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions, it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.

[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM_{10}). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." [OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, 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 permit.

[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.

[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.

[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened, and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances: [OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

(1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
(2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
(3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
(4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d). [OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a "grandfathered source," as defined under AQD rules. Such changes may require a permit modification.

[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(17) for confidential information submitted to or obtained by the DEQ under this section):

(1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
(3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
(4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. 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 this 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 preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that: [OAC 252:100-8-6 (e)(2)]

(1) an emergency occurred and the permittee can identify the cause or causes 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 this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

(1) result in no net emissions increases,
(2) are not modifications under any provision of Title I of the federal Clean Air Act, and
(3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded.

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty-four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

(1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]

(2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]

(a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.
(b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7.
(c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
(d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and

the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.

(4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances: [40 CFR 82, Subpart A]

(1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4.
(2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13: and
(3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156.
(2) Equipment used during the maintenance, service, repair, or disposal of appliances must

comply with the standards for recycling and recovery equipment pursuant to § 82.158.

(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.

(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166.

(5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and

(6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source's Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.

(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).

(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).

(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R.§ 70.8(a) and (c).

(5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.

(6) The DEQ complies with 40 C.F.R. § 70.8(d).

(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).

(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.

(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).

(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[OAC 252:100-43-6]

Scott A. Thompson
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

October 17, 2022

Mr. Brian Flanagan, EHS Manager
Terra International (Oklahoma), LLC
1000 Terra Drive
Woodward, Oklahoma 73801

SUBJECT: Permit Application No. **2018-0001-C (M-5)**
Nitric Acid, Ammonia, and Urea Production Facility FAC ID 1496
Addition of Ammonia Emissions
Woodward, Woodward County, Oklahoma

Dear Mr. Flanagan:

Air Quality has received the permit application for the referenced facility and completed initial review. This application has been determined to be a Tier II application. In accordance with 27A O.S. 2-14-301 and 302 and OAC 252:4-7-13(c), the enclosed draft permit is now ready for public review. The requirements for public review of the draft permit include the following steps, which **you** must accomplish:

1. Publish at least one legal notice (one day) in at least one newspaper of general circulation within the county where the facility is located (Instructions enclosed);
2. Submit sample notice and provide date of publication to **AQD 5 days prior to notice publishing;**
3. Provide for public review, for a period of 30 days following the date of the newspaper announcement, a copy of the application and draft permit at a convenient location (preferentially at a public location) within the county of the facility;
4. Send AQD a signed affidavit of publication for the notice(s) from Item #1 above within 20 days of publication of the draft permit. Any additional comments or requested changes you have for the draft permit, or the application should be submitted within 30 days of publication.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

NOTICE OF DRAFT PERMIT
TIER II or TIER III AIR QUALITY PERMIT APPLICATION

APPLICANT RESPONSIBILITIES

Permit applicants are required to give public notice that a Tier II or Tier III draft permit has been prepared by DEQ. The notice must be published in one newspaper local to the site or facility. Note that if either the applicant or the public requests a public meeting, this must be arranged by the DEQ.

1. Complete the public notice using the samples provided by AQD below. Please use the version applicable to the requested permit action;
   Version 1 – Traditional NSR process for a construction permit
   Version 2 – Enhanced NSR process for a construction permit
   Version 3 – initial Title V (Part 70 Source) operating permit, Title V operating permit renewal, Significant Modification to a Title V operating permit, and any Title V operating permit modification incorporating a construction permit that followed Traditional NSR process
2. Determine appropriate newspaper local to facility for publishing;
3. Submit sample notice and provide date of publication to AQD 5 days prior to notice publishing;
4. Upon publication, a signed affidavit of publication must be obtained from the newspaper and sent to AQD.

REQUIRED CONTENT (27A O.S. § 2-14-302 and OAC 252:4-7-13(c))

1. A statement that a Tier II or Tier III draft permit has been prepared by DEQ;
2. Name and address of the applicant;
3. Name, address, driving directions, legal description and county of the site or facility;
4. The type of permit or permit action being sought;
5. A description of activities to be regulated, including an estimate of emissions from the facility;
6. Location(s) where the application and draft permit may be reviewed (a location in the county where the site/facility is located must be included);
7. Name, address, and telephone number of the applicant and DEQ contacts;
8. Any additional information required by DEQ rules or deemed relevant by applicant;
9. A 30-day opportunity to request a formal public meeting on the draft permit.

SAMPLE NOTICE *(Italicized print is to be filled in by the applicant.)***:**

DEQ NOTICE OF TIER *…II or III…* **DRAFT PERMIT**

A Tier *…II or III…* **application for an air quality** *…type of permit or permit action being sought (e.g., significant modification to a Title V permit or Title V/Title V renewal permit)…* **has been filed with the Oklahoma Department of Environmental Quality (DEQ) by applicant,** *…name and address.*

The applicant requests approval to *…brief description of purpose of application…* **at the** *…site/facility name … …***[proposed to be] located at** *…physical address (if any), driving directions, and legal description including county…..*

In response to the application, DEQ has prepared a draft operating permit [modification] (Permit Number: *…xxxx-xxxx-x…***), which may be reviewed at** *…locations (one must be in the county where the site/facility is located)…* **or at the Air Quality Division's main office (see address below). The draft permit is also available for review under Permits for Public Review on the DEQ Web Page: http://www.deq.ok.gov/**

This draft permit would authorize the facility to emit the following regulated pollutants: *(list each pollutant and amounts in tons per year (TPY))* [For facility modifications only, either add**: , which represents** (*identify the emissions change involved in the modification)*, or add: **. The modification will not result in a change in emissions**]

The public comment period ends 30 days after the date of publication of this notice. Any person may submit written comments concerning the draft permit to the Air Quality Division contact listed below or as directed through the corresponding online notice. [Modifications only, add: **Only those issues relevant to the proposed modification(s) are open for comment.**] **A public meeting on the draft permit [modification] may also be requested in writing at the same address. Note that all public meetings are to be arranged and conducted by DEQ staff.**

In addition to the public comment opportunity offered under this notice, this draft permit is subject to U.S. Environmental Protection Agency (EPA) review, EPA objection, and petition to EPA, as provided by 40 CFR § 70.8.

If the Administrator (EPA) does not object to the proposed permit, the public has 60 days following the Administrator's 45-day review period to petition the Administrator to make such an objection as provided in 40 CFR 70.8(d) and in OAC 252:100-8-8(j).

Information on all permit actions including draft permits, proposed permits, final issued permits and applicable review timelines are available in the Air Quality section of the DEQ Web page: http://www.deq.ok.gov/.

For additional information, contact …*names, addresses and telephone numbers of contact persons for the applicant,* or contact DEQ at: Chief Engineer, Air Quality Division, 707 N. Robinson, Suite 4100, P.O. Box 1677, Oklahoma City, OK, 73101-1677. Phone No. (405) 702-4100.

Scott A. Thompson
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

October 17, 2022

KDHE, BAR
Forbes Field, Building 283
Topeka, KS 66620

SUBJECT: Permit Application No. **2018-0001-C (M-5)**
Terra International (Oklahoma), LLC
Woodward Nitric Acid, Ammonia, and Urea Production Facility
Addition of Ammonia Emissions
Woodward, Woodward County, Oklahoma
Sec. 29 – T23N – R 21W
Latitude 36.43840°N, Longitude 99.47146°W
FAC ID 1496
Permit Writer: David Schutz

Dear Sir / Madame:

The subject facility has requested a construction permit for a significant modification to a Part 70 source. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the Oklahoma - **Kansas** border, a copy of the draft permit will be provided to you upon request.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

Scott A. Thompson
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

October 17, 2022

Texas Commission on Environmental Quality
Operating Permits Division (MC 163)
P.O. Box 13087
Austin, TX 78711-3087

SUBJECT: Permit Application No. **2018-0001-C (M-5)**
Terra International (Oklahoma), LLC
Woodward Nitric Acid, Ammonia, and Urea Production Facility
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