OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **April 29, 2008**

TO: Phillip Fielder, P.E., Permits and Engineering Group Manager, Air Quality Division

THROUGH: Kendal Stegmann, Senior Environmental Manager, Compliance and Enforcement

THROUGH: Jian Yue, P.E., Engineering Section

THROUGH: Phil Martin, P.E., Engineering Section

THROUGH: Peer Review

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

SUBJECT: Evaluation of Permit Application No. **99-092-C (M-2)(PSD)**
Koch Nitrogen Company
Enid Nitrogen Plant
Urea Plant Expansion
Enid, Garfield County, Oklahoma
1619 South 78th
Sec. 17 – T22N – R5W
Five Miles East of Enid on Highway 64, One Mile South on County Road
Latitude 36.383^{o}N, Longitude 97.765^{o}W

SECTION I. INTRODUCTION

Koch Nitrogen Company (KNC) owns and operates an ammonia products and nitrogen fertilizer plant (SIC 2873) approximately five (5) miles east of Enid, Oklahoma. The plant was acquired by KNC from the previous owner on May 20, 2003. The facility is currently operating as authorized by Permit No. 99-092-TV issued on December 18, 2006.

KNC proposes to modify the existing urea production unit from a capacity of 1,150 TPD to a capacity of 1,550 TPD. The project will also involve construction of a 20,000-ton urea storage dome, a 425-TPH railcar loading operation, and a new cooling tower. The primary motivation is to change a large amount of product from volatile liquid form (ammonia) to solid form (urea); no "debottlenecking" of the plant will occur. However, there will be "associated" emissions increases from increase utilization of two existing boilers which supply steam to the synthesis and evaporation steps. All other emissions changes will be from new units and increased throughput from the modified units.

Project emissions will exceed the PSD Significant Emission Rate (SER) for PM_{10}. Therefore, the project is subject to Prevention of Significant Deterioration (PSD) review. The PSD regulations require Best Available Control Technology (BACT) and air quality analyses for PM_{10}.

SECTION II. FACILITY DESCRIPTION

Construction of the plant began in 1973. The operations at the site are split into six distinct "plants:" the two (2) ammonia plants (each approximately 1,600 TPD capacity), the urea plant, the urea ammonium nitrate (UAN) plant, the vapor CO_2 plant, and the argon plant. The CO_2 and argon plants are operated by KNC, but are owned by other entities. Additionally, a contractor owns, operates and maintains a portable ammonium polyphosphate process unit that is also used on-site on a seasonal basis. The facility operates process units that conduct the following operations:

- Natural Gas Desulfurization Raw materials used for the production of ammonia are natural gas, water and air. After natural gas enters the plant, the natural gas stream is split. A portion of the stream is used to fuel various combustion sources. The remainder of the stream can be directed to a steam-driven compressor to boost the pressure, if needed, or sent directly to the desulfurization unit. The desulfurization unit uses a cobalt-molybdenum or nickel-molybdenum catalyst followed by a zinc catalyst to "sweeten" or remove sulfur compounds from the natural gas. These sulfur compounds would otherwise poison subsequent catalysts.

- Catalytic Steam Reforming Steam reforming is the process by which hydrogen gas is produced and nitrogen is added. Steam reforming takes place in two steps: primary reforming and secondary reforming. In the Primary Reformer, steam (H_2O) is reacted with methane (CH_4) to form carbon monoxide (CO), carbon dioxide (CO_2), and hydrogen (H_2) in the presence of a nickel-based reforming catalyst. H_2 will be used later to react with N_2 to produce ammonia (NH_3). Each Primary Reformer is equipped with a gas-fired boiler (EU-2202UB) rated at 144 MMBTUH. Primary Reformer No. 1 and Primary Reformer No. 2 are limited by an existing permit to 909.6 MMBTUH and 931.4 MMBTUH, respectively. In the Secondary Reformer, air is added to the process stream, which provides nitrogen (N_2). The ratio of air is carefully controlled to provide the correct mixture of N_2 and H_2 to obtain the optimum yield from the reaction. The stream leaving the Secondary Reformer is cooled in a waste heat boiler as it exits the reformer.

- Carbon Monoxide Shift The shift converter consists of two converter systems: high temperature shift (HTS) and low temperature shift (LTS). The objective of the shift converters is to "shift" as much CO to CO_2 as possible. In the shift converters, CO is reacted with H_2O to form CO_2 and H_2. The unreacted water vapor is then condensed and removed from the process gas stream. The stream is now referred to as "synthesis gas." The raw synthesis gas passes into the CO_2 Absorber for the initial synthesis gas purification step. The LTS catalyst produces a small amount of methanol, as a byproduct, which contributes to potential methanol emissions at the Plant. KNC, however, utilizes a low methanol producing catalyst designed to minimize methanol formation.

- Carbon Dioxide Removal In the CO_2 Absorber, the synthesis gas stream flows upward and passes through packed beds, which promote close contact of the synthesis gas with a down flowing unsaturated (lean and semi-lean) solution of potassium carbonate and potassium bicarbonate (Benfield solution). The Benfield solution absorbs the CO_2 from the synthesis gas stream to form potassium bicarbonate. The Benfield solution is regenerated by flashing into the CO_2 Stripper Towers (EU-1102E1 and EU-1102E2). The absorber overhead flows to the CO_2 Absorber knock out drum for removal of any entrained Benfield solution. The synthesis gas leaving the knock out drum then passes through heat exchangers to be preheated before flowing to the inlet of the Methanator. The stripped CO_2 leaves the top of the stripper and is sent to the plant CO_2 users.

- Methanation At this point in the process, the synthesis gas contains mostly H_2 and N_2 with residual amounts of CO and CO_2. The Methanator catalyst reacts the remaining carbon oxides with hydrogen to form methane and water. Methanation is required to remove the remaining CO and CO_2, which could poison the ammonia synthesis catalyst.

- Ammonia Synthesis ($3H_2 + N_2 \rightarrow 2NH_3$) The stream from the Methanator is cooled in a series of steps and is then compressed. Compression of the purified synthesis gas is the first step in the liquid ammonia production phase of the process. Prior to the final compression stage, a stream of recycled synthesis gas, containing ammonia, is combined with the stream. The high-pressure synthesis gas leaves the after-coolers of the compressors and is cooled further in two parallel streams. Ammonia from the recycle stream condenses out in the chillers and is sent to storage. The synthesis gas continues on to the inlet of the Ammonia Converter. In the Converter, N_2 reacts with H_2 to form ammonia (NH_3).

  The Converter effluent purge gas is sent to the ammonia absorption process unit for ammonia removal. In the event of unanticipated outages, the ammonia-laden purge gas is sent to the reformer as fuel. Liquid ammonia from the purge separator is routed to the refrigeration system for recovery. Each Converter is equipped with a natural gas fired start-up heater (EUG 4) rated at 33 MMBTUH. The start-up heater is used to heat the Converter up to reaction temperature during start-up.

  The plant operates two (2) atmospheric cold storage tanks and two (2) pressurized bullet tanks for ammonia storage. Some of the ammonia is loaded into trucks and railcars (EU-AMH) or transported to consumers via pipeline. The flare (EU-2220U) is used to combust ammonia or hydrocarbons during loading, unloading and maintenance/startup/shutdown operations and to combust process gas (containing ammonia, hydrocarbons, hydrogen, etc.) from various relief valves throughout the plant.

- Urea Synthesis (Urea Plant) The urea plant receives CO_2 directly from the ammonia plants, and ammonia from the pressurized ammonia storage tanks. The CO_2 feed is compressed to synthesis pressure using a steam driven compressor and the ammonia is pumped to the synthesis pressure, and both are fed into the urea reactor (EUG 7). Condensate from the compression of CO_2 is sent to the Process Condensate Stripper (EU-308E). The reactants form ammonium carbamate, which dehydrates to urea. Excess water from the urea synthesis process is sent to the Urea Plant Wastewater Concentrator (EUG 8).

- Urea Evaporation Urea concentration is accomplished through the use of a vacuum process in two (2) steps. The urea solution flows through the First Stage Evaporator where it is heated and vacuum applied to remove water. The urea solution then passes through the Second Stage Evaporator where the water content is further reduced. The solution is now referred to as the urea melt. The urea melt is delivered to the granulation step for additional processing. At this stage in the process, a portion of the liquid solution may be diverted for sale as a urea solution or may be used in urea ammonium nitrate (UAN) product. The evaporation process requires heat, which is provided by steam from two (2) natural gas fired boilers (EU-403A and EU-403B) rated at 84 MMBTUH each. The steam they produce is used in the synthesis step, in the evaporation step, and in the CO_2 compressor. The heat is also required to keep the refined urea in a molten state for the next step in the process. A conditioning agent is added by direct injection to the urea melt to form methylenediurea. The conditioning agent is stored in the conditioning agent storage tank (EU-D202) prior to use. The conditioning agent reacts with the urea to reduce caking during storage and to reduce dust formation during material handling.

- Urea Granulation Granulation takes place in three (3) rotating drums. The hot urea melt is sprayed into rotating drums (urea granulators) filled with solid urea granules. The urea spray coats the smaller granules in the drum. Cool air is used in a counter flow to the spray to cool the urea granules. The urea granulators (EU-K201A, EU-K201B, EU-K201C) each utilize a wet scrubber primarily for recovery of product but which also reduce PM emissions. The solid urea is screened for size and sent to product storage via an enclosed belt conveyor. The material is transported in bulk via trucks or railcars.

- Urea Synthesis Plant Ammonia from ammonia storage and CO_2 from the ammonia plants are reacted in a once-through urea production unit at high pressure to form ammonium carbamate ($NH_2CO_2NH_4$), which then forms urea ($CO(NH_2)_2$). The CO_2 is compressed to reaction pressure using an electric driven reciprocating compressor. At the outlet of the urea synthesis reactor, the reaction mixture's pressure is dropped, which causes the unreacted ammonium carbamate to decompose back to gaseous ammonia and carbon dioxide, which is referred to as "off-gas." The off-gas stream is split and sent as ammonia feed to the nitric acid section of the UAN plant and to the ammonium nitrate section of the UAN plant.

- Nitric Acid Synthesis Nitric acid is produced in three steps: ammonia oxidation to form nitrogen oxide (NO) and H_2O; NO oxidation to form nitrogen dioxide (NO_2); and, absorption of NO_2 in water to form nitric acid (HNO_3). In the first step, compressed air and excess ammonia from the urea plant are reacted in a converter over a platinum gauze catalyst to produce nitrogen oxide (NO) and water. The nitric oxide is further oxidized to form NO_2. The NO_2 is absorbed by water in a absorption column to form nitric acid. A bleaching section uses a secondary stream of air to strip some of the dissolved gases (mainly NO and NO_2) from the nitric acid prior to storage. Unreacted nitrogen oxides in the tail gases are mixed with hydrogen rich synthesis gas and directed to the nonselective catalytic reduction (NSCR) abatement system for NO_X control. Nitric acid is stored in a storage tank, which is vented to the process condensate overhead condenser.

- Ammonium Nitrate Synthesis Ammonia rich off gas from the urea section of the UAN plant is neutralized with nitric acid to form ammonium nitrate. The synthesis process pH is carefully controlled for safety reasons such that no free ammonia remains. Process equipment for ammonium nitrate production includes two (2) distinct vessels (neutralizer and process condensate tank), each equipped with a scrubber. These scrubbers are inherent to the process and cannot be shutdown or bypassed during the production process. The process cannot function as designed and the UAN product cannot be made without the scrubber section of each vessel operating.

- Urea Ammonium Nitrate (UAN) Solution The final step in the production of UAN is combining the urea with the ammonium nitrate to produce the UAN solution. The UAN solution contains a product specific percentage of ammonium nitrate and urea. The remainder of the solution is water. The product is stored in a storage tank prior to being bulk shipped by truck or rail. The plant operates one (1) UAN day tank and one (1) UAN storage tank.

- Carbon Dioxide Plant The CO_2 Plant receives CO_2 produced as a byproduct in the ammonia plants and prepares it for transportation via pipeline. The CO_2 passes through three (3) stages of compression and cooling, then a final dehydration polish by contacting the gas with a circulating solution of triethylene glycol (TEG). The TEG is continuously circulated back to a glycol dehydrator where the water is driven off by heating with one (1) natural gas-fired glycol dehydrator reboiler (EU-R2041) rated at 1.5 MMBTUH. After dehydration, the CO_2 is further compressed to approximately 1,700 psig for injection to the pipeline. The CO_2 Plant is operated by KNC, but is owned by another entity.

- Argon Plant The Argon Plant is designed to recover argon from the ammonia high pressure and low pressure purge gas streams using a cryogenic process. The first step in the Argon Plant process is the removal of ammonia and water (via the ammonia absorption unit) from the purge gas stream to prevent formation of solid material in the cryogenic process. The purge gas then enters a series of exchangers, columns, compressors, and expanders designed to cool and liquefy the gasses and separate them into the various component streams. The streams include liquid argon for transportation off plant, a hydrogen rich stream for ammonia production, and a methane rich stream for

use as fuel in the ammonia plants. The Argon Plant is operated by KNC, but is owned by another entity.

Plant operations are 24 hrs/day, every day of the year.

SECTION III. PROJECT DESCRIPTON

The overall project is to increase the plant capacity of urea from 1,150 TPD to 1,550 TPD.

Initially, the areas where CO_2 and ammonia are reacted will be replaced with high-pressure piping, or the existing units may be replaced altogether. Additional CO_2 pumping capacity will be installed between CO_2 storage and the reactors. An additional cooling tower will be installed to provide additional cooling water for the expanded operations. There will be increased emissions from the synthesis vents resulting from the increased throughput, and throughput of the "urea conditioning agent" storage tank will increase. The project will require an increase in steam production from two existing boilers.

The urea will proceed to three existing urea granulators. A lower cooling air temperature and hotter product temperature will allow the existing units to accommodate the increased production. Air discharges will continue to three existing wet scrubbers, while granular solids will proceed either to existing or new urea product handling units.

All urea handling operations will be enclosed (bucket elevators, conveyors, bulk toters, etc.) between the granulators and proposed new storage dome. Other new enclosed conveyors will run from the storage dome to a new railcar loading operation. The capacity of the new railcar loading operation is 425 TPH.

SECTION IV. EQUIPMENT

New equipment constructed for this project will be listed first, then modified equipment, then units with associated emissions increases, and finally all other existing facility equipment.

A. <u>New Equipment</u>

EUG 14A New Fugitives

EU ID	Point ID	EU Name
UMS	UMS	Urea Materials Storage
UMH	UMH	Urea Materials Handling
UML	UML	Urea Railcar Loading

EUG 16 New Cooling Tower

EU ID	Point ID	EU Name
22014E	22014E	New Cooling Tower

B. Modified Equipment

EUG 6 Urea Granulators

EU ID	Point ID	EU Name/Model	Manufacturer	Capacity	Construction/ Modification Date
K201A	6-9104	Urea Granulator No. 1	Foster Wheeler	517 TPD	1980 / 2007
K201B	6-9105	Urea Granulator No. 2	Foster Wheeler	517 TPD	1980 / 2007
K201C	6-9106	Urea Granulator No. 3	Foster Wheeler	517 TPD	1980 / 2007

EUG 7 Urea Synthesis Vents

EU ID	Point ID	EU Name/Model	Manufacturer	Capacity *	Construction/ Modification Date
HIC135	7-9111	High Pressure Vent	Foster Wheeler	1,550 TPD	1980 / 2007
D119	7-9110	Low Pressure Vent	Foster Wheeler	1,550 TPD	1980 / 2007

* Post-project capacity.

C. Equipment with Associated Emissions Increases

EUG 1 Plant-wide

This EUG is established to address requirements that apply to the entire plant, including open burning restrictions, visible emissions, fugitive dust control. The plant is requesting to operate under a state and federally enforceable plant-wide cap for methanol, which is classified as a hazardous air pollutant (HAP). The process condensate stripper, the primary source of methanol emissions from this type of plant, is refluxed to the process rather than vented to the atmosphere.

EUG 3 Boilers/Heaters > 50 MMBTUH

EU ID	Point ID	EU Name/Model	Heat Input	Manufacturer	Constr. Date
2202UB*	3-9099	Ammonia Unit Startup Boiler	144 MMBTUH	Zurn Industries	1975
403A	3-9100	Urea Boiler No. 1	84 MMBTUH	Zurn Industries	1980
403B	3-9101	Urea Boiler No. 2	84 MMBTUH	Zurn Industries	1980

*****The ammonia unit startup boiler is not an affected facility for the PSD project.

EUG 5 Conditioning Agent Storage Tank

EU ID	Point ID	Capacity	Construction Date
D202	5-9107	54,319 Gallons	1980

D. Existing Equipment (Not Affected)

EUG 2 Ammonia Plant Primary Reformers

Location	EU ID	Point ID	Heat Input*	Manufacturer	Construction Date
Ammonia Plant #1	101B1	2-9095	909.6 MMBTUH	Kellogg	1973
Ammonia Plant #2	101B2	2-9097	931.4 MMBTUH	Kellogg	1975

*Heat input is based on a 12-month rolling average period and includes arch burners, tunnel burners, superheat burners, and auxiliary boiler burners.

EUG 4 Boilers/Heaters < 50 MMBTUH

Location	EU ID	Point ID	EU Name/Model	Heat Input	Manufacturer	Construction Date
Ammonia Plant #1	102B1	4-9102	Ammonia Unit Startup Heater No. 1	33 MMBTUH	Kellogg	1973
Ammonia Plant #2	102B2	4-9103	Ammonia Unit Startup Heater No. 2	33 MMBTUH	Kellogg	1975

EUG 8 Wastewater Concentrator

Location	EU ID	Point ID	EU Name/Model	Construction Date
Urea Plant	209U	8-9112	Wastewater Concentrator	1980

EUG 9 UAN Wastewater Concentrator

Location	EU ID	Point ID	EU Name/Model	Construction Date
UAN Plant	NT414	9-9117	UAN Wastewater Concentrator	1968 / 1990 *

* This unit was originally constructed in 1968 and relocated to Enid in 1990 from Kennewick, Washington.

The above two units emit only ammonia. They were placed in the application prior to recent changes in OAC 252:100-41.

EUG 10 CO_2 Stripping Towers

Location	EU ID	Point ID	EU Name/Model	Manufacturer	Construction Date
Ammonia Plant #1	1102E1	10-9120	CO_2 Stripping Tower 1 (PIC30-1)	Kellogg	1973
Ammonia Plant #2	1102E2	10-9121	CO_2 Stripping Tower 2 (PIC30-2)	Kellogg	1975

EUG 11 Nitric Acid Plant

EU ID	Point ID	Manufacturer	Capacity (as 100% HNO_3)	Construction Date
M221	12-9115	Weatherly	118 TPD	1968 / 1990 *

* This unit was originally constructed in 1968 and relocated to Enid in 1990 from Kennewick, Washington.

EUG 12 Ammonium Nitrate Plant

EU ID	Point ID	Manufacturer	Capacity (as 75.5% AN)	Construction Date
T311	12-9116	Weatherly	176 TPD	1968 / 1990 *

* This unit was constructed in a different location and relocated to Enid in 1990.

EUG 13 Flare

EU ID	Point ID	Heat Input *	Construction Date
222OU	13-9118	1,350 SCFH	1993

*Heat input refers to natural gas and/or purge gas to maintain flare pilot.

EUG 14 Fugitives

Location	EU ID	Point ID	EU Name
Ammonia Plants	AMH	14-9119	Ammonia Plant Material Handling – Truck/Railcar Loading
Urea Plant	UMH	14-9120	Urea Plant Material Handling/Loading Fugitives

EUG 15 Startup/Shutdown Vents

Location	EU ID	Point ID	EU Name	Construction Date
Ammonia Plant #2	308E	15-9109	Process Condensate Stripper	1980
Ammonia Plant #1	SP73-1	15-9151	Startup/Shutdown Vent 1	1973
Ammonia Plant #1	SP74-1	15-9152	Startup/Shutdown Vent 2	1973
Ammonia Plant #1	SP75-1	15-9153	Startup/Shutdown Vent 3	1973
Ammonia Plant #2	SP73-2	15-9154	Startup/Shutdown Vent 1	1975
Ammonia Plant #2	SP74-2	15-9155	Startup/Shutdown Vent 2	1975
Ammonia Plant #2	SP75-2	15-9156	Startup/Shutdown Vent 3	1975
Ammonia Plant #1	1102E1	15-9120	CO_2 Stripping Tower 1	1973
Ammonia Plant #2	1102E2	15-9121	CO_2 Stripping Tower 2	1975

EUG 17 Insignificant Activities

Unit ID	Description
GEN	460-hp Emergency generator
PUMP	140-hp Fire water pump
R-2401	Glycol dehydration reboiler
APP-IC	475-hp Portable mixer engine *
APP-Portable Unit	APP Portable 10-34-0 processing unit*
Diesel	Diesel storage tanks (3)
Gasoline	Gasoline refueling tank (1)
UAN TANKS	UAN tanks (2)
LIME	Lime silos (2)
D202	Conditioning agent storage tank (1)

* Equipment owned, operated, and maintained by a contractor.

SECTION V. EMISSIONS

Emission factors are derived from several sources including AP-42, other published emission estimation methodologies, stack tests, laboratory data, permitted limits, mass balance equations, and process knowledge. As indicated, some factors have been adjusted by a safety factor to account for process variability.

KNC quantified emissions of hazardous air pollutants (HAPs) from processes facility-wide. For the combustion processes, emission factors from AP-42 (7/98), Section 1.4 and Section 1.11 and from other published information are used as a means of estimating emissions, some of which were derived from limited test data. For HAP estimates from non-combustion processes, methodology is discussed in this section for individual emission unit groups. Ammonia emissions are no longer shown due to the recent revocation of OAC 252:100-41.

A. New Units

EUG 14A New Fugitives

Fugitive emissions associated with the storage, handling, and loading of the urea product are considered negligible due to the characteristics of the material. Urea is a non-brittle, organic, and sticky material that is not likely to generate significant amounts of dust or particulate emissions during material handling. A sieve analysis of urea product showed no measurable PM_{10}. Using the methods of AP-42 (1/95) for batch drop operations will greatly overstate emissions.

Point ID	Emission Unit	PM		PM_{10}	
		lb/hr	TPY	lb/hr	TPY
UMS	Urea Materials Storage	0.04	0.20	--	--
UMH	Urea Materials Handling	0.35	0.25	--	--
UML	Urea Railcar Loading	7.04	5.14	--	--
TOTALS		**7.41**	**5.49**	--	--

EUG 16 New Cooling Tower

PM_{10} emissions from the new cooling tower were calculated based on a maximum water circulation rate of 12,000 GPM, total dissolved solids of 3,500 ppm by weight, and a drift factor of 0.002%.

Point ID	Emission Unit	PM_{10}	
		lb/hr	TPY
22014E	New Cooling Tower	0.42	1.84

B. Modified Units

EUG 6 Urea Granulators

The emission factor for PM is the controlled factor derived from recent stack testing, 0.307 lb/ton from drum granulators, plus a 13% safety factor. It was assumed that PM is equal to PM_{10}.

Formaldehyde factors are from an EPA document, "Locating and Estimating Air Emissions from Sources of Formaldehyde (Revised)", dated March 1991. The EPA document provides a controlled emission factor of 0.0054 lb formaldehyde/ton urea.

Methanol emissions are present in the granulators from the methanol in the conditioning agent. Vendor specifications are "0.1% - 0.3%" methanol, but the concentrations are routinely less than 0.1%. Short-term emission rates were calculated using the maximum stated (0.3%) while annual emissions were estimated using a conservative 0.15%.

Point ID	Emission Unit	PM_{10}		Formaldehyde		Methanol	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
6-9104	Granulator 1	6.60	28.92	0.12	0.51	1.01	2.21
6-9105	Granulator 2	6.60	28.92	0.12	0.51	1.01	2.21
6-9106	Granulator 3	6.60	28.92	0.12	0.51	1.01	2.21
TOTALS		**19.80**	**86.76**	**0.36**	**1.53**	**3.03**	**6.62**

EUG 7 Urea Synthesis Vents

The emission factor for PM is the uncontrolled factor from AP-42, Section 8.2, (7/93). It was assumed that PM is equal to PM_{10}. It was assumed that 75% of the PM emissions are vented from the high-pressure synthesis vent (EUHIC135) and 25% is vented from the low-pressure synthesis vent (EUD119). PM emissions are based on the AP-42 factor (Section 8.2) of 0.028 lb/ton (high end of the range listed in AP-42).

CO emissions are present from the small amount of CO in the CO_2 stream from the ammonia plants. CO emissions are estimated at 0.058 lb/ton total (50% emitted from each vent) based on stack testing on the CO2 stripping towers in June 2006, adjusted with a 300% safety factor.

A maximum short-term production of 1,600 TPD was used for emissions calculations.

Point ID	Emission Unit	CO		PM_{10}	
		lb/hr	TPY	lb/hr	TPY
7-9111	High Pressure Vent	1.93	8.20	1.40	5.94
7-9110	Low Pressure Vent	1.93	8.20	0.47	1.98
TOTALS		**3.86**	**16.40**	**1.87**	**7.92**

C. Equipment with Associated Emissions Increases

EUG 3 Boilers/Heaters > 50 MMBTUH

Emission factors for CO, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and assuming a fuel heat content of 1,020 Btu/Scf. A 50% safety factor was added to the AP-42 factors to account for process variability. The emission factor for NO_X is based on the OAC 252:100-33 limit of 0.2 lb/MMBTU. Changes in emissions are based on potential emissions minus 2005-2006 actual emissions.

A. Current Emissions

Point ID	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
3-9100	403A	0.9	4.1	0.1	0.3	16.8	73.6	0.7	3.0	10.4	45.4
3-9101	403B	0.9	4.1	0.1	0.3	16.8	73.6	0.7	3.0	10.4	45.4
TOTALS		**1.8**	**8.2**	**0.2**	**0.6**	**33.6**	**147.2**	**1.4**	**6.0**	**20.8**	**90.8**

B. Emissions Changes

Point ID	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
3-9100	403A	0.32	1.38	0.1	0.1	0.29	1.29	0.1	0.1	3.51	15.39
3-9101	403B	0.32	1.38	0.1	0.1	0.29	1.29	0.1	0.1	3.51	15.39
TOTALS		**0.64**	**2.76**	**0.2**	**0.2**	**0.58**	**2.58**	**0.2**	**0.2**	**7.02**	**30.78**

EUG 5 Conditioning Agent Storage Tank

Maximum emission estimates of formaldehyde from the conditioning agent storage tank (EU-D202) are based on a maximum annual loading rate, maximum hourly loading rate, and upper-bound free formaldehyde concentration in the conditioning agent (30% by weight). The emission factor for formaldehyde was derived from the ideal gas law using the partial pressure of a 30% aqueous formaldehyde solution at a maximum anticipated storage temperature.

Point ID	Tank No.	Formaldehyde Emissions	
		lb/hr	TPY
5-9107	D202	1.7	0.10

Methanol emissions from this source are included in EUG 6 as it was conservatively assumed that the methanol contained in the conditioning agent would all be emitted during the granulation process.

D. Existing Equipment (Not Affected)

EUG 2 Ammonia Plant Primary Reformer Heaters

For natural gas and ammonia plant purge gas combustion, emission factors for CO, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98) using a fuel heat content of 1,020 Btu/scf. A 50% safety factor was added to the AP-42 factors to account for process variability. The short-term emission factor for NO_X is based on the OAC 252:100-33 limit of 0.2 lb/MMBTU. Annual NO_X emissions are based on limits established in Permit No. 99-092-C.

Point ID	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
2-9095	101B1	10.2	44.5	0.8	3.5	181.9	717.1	7.4	32.2	112.4	492.1
2-9097	101B2	10.4	45.6	0.8	3.6	186.3	734.3	7.5	33.0	115.1	503.9
TOTALS		**20.6**	**90.1**	**1.6**	**7.1**	**368.2**	**1451.4**	**14.9**	**65.2**	**227.5**	**996.0**

For used oil combustion, emission factors for CO, NO_x, PM_{10}, SO_2, and VOC are from AP-42 (10/96), Section 1.11. To account for process variability, it was conservatively assumed the used oil contained a maximum 2% ash content and 2% sulfur content. Annual used oil throughput is based on a total of 23,000 gallons of used oil per year and 250 gallons per hour in the Primary Reformers.

Point ID	Emission Units	PM_{10}		SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
2-9095	101B1	14.0	0.7	26.3	1.2	2.3	0.1	0.1	0.01	0.6	0.03
2-9097	101B2	14.1	0.7	26.5	1.2	2.4	0.1	0.1	0.01	0.6	0.03
TOTALS		**28.1**	**1.4**	**52.8**	**2.4**	**4.7**	**0.2**	**0.2**	**0.02**	**1.2**	**0.06**

EUG 3 Boilers/Heaters > 50 MMBTUH

Emission factors for CO, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and a fuel heating content of 1,020 Btu/Scf. A 150% safety factor was applied to the AP-42 factors to account for process variability. The emission factor for NOx is based on OAC 252:100-33 limit of 0.2 lb/MMBTU. The annual emission rates for 2202UB are based on 4,380 hours per year operation.

Point ID	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
3-9099	2202UB	1.6	3.5	0.1	0.2	28.8	63.0	1.2	2.6	17.8	39.0

EUG 4 Boilers/Heaters < 50 MMBTUH

Emission factors for CO, NO_x, PM_{10}, SO_2, and VOC are from AP-42, Section 1.4 (7/98), and a fuel heating content of 1,020 Btu/Scf. A 150% safety factor was applied to the AP-42 factors to account for process variability.

Point ID	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
3-9102	102B1	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
3-9103	102B2	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
TOTALS		**0.8**	**3.2**	**0.06**	**0.2**	**9.8**	**42.6**	**0.6**	**1.2**	**8.1**	**35.8**

EUG 10 CO_2 Stripping Towers

Based on process knowledge, a small amount of CO may be present in the CO_2 stream vented from the CO_2 stripper during startup, shutdown, or malfunction events. The emission factor for CO is derived from stack testing performed in June 2006 for the CO_2 Stripping Tower #1 scaled up to the maximum CO_2 production rate and a safety factor of 300% to account for process variability. Note that CO emissions are only vented from this source during startup, shutdown, or malfunction events; however, for PTE calculations, 8,760 hours/year of venting was assumed.

Point ID	Emission Unit	CO	
		lb/hr	TPY
10-9120	CO_2 Stripping Tower 1	5.8	25.4
10-9121	CO_2 Stripping Tower 2	5.8	25.4
TOTALS		**11.6**	**50.8**

This EUG also has the potential to emit methanol during periods of startup, shutdown, or malfunction of the ammonia plants. Startup/shutdown emissions are included in EUG 15.

EUG 11 Nitric Acid Plant

Potential emissions of NO_x from this source are based on previously established permit limits from Permit No. 90-140-O. NO_x emissions were calculated based on a permitted concentration of 79 ppmdv and a design exhaust flow rate of 8,817 SCFM. This unit is equipped with a non-selective catalytic reduction system (NSCR) to reduce NO_x emissions.

Point ID	Emission Unit	NO_X	
		lb/hr	TPY
12-9115	Nitric Acid Plant	5.0	21.9

EUG 12 UAN Plant

The emission factor for PM is a controlled factor from AP-42 Section 8.3. AP-42 provides a wide range of controlled factors for PM, which is based on the type of controls used at the UAN Plant. The maximum PM factor was adjusted to account for the type of controls used at the Enid Plant. It was assumed that PM is equal to PM_{10}. A small amount of CO is present in the CO_2 feed from the urea section of the UAN Plant. A mass balance equation was used to quantify CO emissions.

Point ID	Emission Unit	PM_{10}		CO	
		lb/hr	TPY	lb/hr	TPY
12-9116	UAN Plant	2.6	11.0	0.1	0.5

EUG 13 Flare

The flare pilot consumes 1,350 SCF/hr natural gas and the flare combusts a maximum 60,000 lb/hr of ammonia and 4,000 lb/hour of propane. Design criteria assure 98% destruction efficiency. For the combustion of natural gas and ammonia plant purge gas, the emission factors for CO and NO_x are from AP-42 Section 13.5 (dated 9/91, reformatted 1/95). The emission factor for SO_2 is from AP-42 Section 1.4 (dated 7/98). KNC estimated NOx emissions from ammonia flaring using emission estimating methodologies from the "Air Permit and Technical Guidance for Chemical Sources: Flares and Oxidizers", Texas Natural Resource Conservation Commission (TNRCC), Air Permits Division, October 2000 (RG-109 Draft).

On occasion, the plant may send hydrocarbons to the flare from depressurizing railcars prior to loading with ammonia or for other reasons related to plant operations or maintenance. Emission factors for CO and NO_x from hydrocarbon combustion are from AP-42, Section 13.5. The emission factor for SO_2 is from AP-42, Section 1.4. VOC emissions were calculated using a mass balance and based on 98% destruction efficiency.

Point ID	Emission Unit	SO_2		NO_x		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
13-9118	Flare	0.05	0.01	339.3	15.8	80.1	2.3	30.4	3.0

EUG 14 Plant Fugitives

The main source of particulate matter fugitive emissions at the plant consists of urea fugitives from granular urea storage, transfer, and loading (EU UMH). Similarly to the proposed new operations, the existing operations should generate negligible PM_{10} due to the organic, non-brittle, sticky nature of the material. In addition, the plant adds a conditioning agent that further reduces dust formation.

Point ID	Emission Unit	PM		PM_{10}	
		lb/hr	TPY	lb/hr	TPY
UMH	Urea Handling/ Loading	1.68	2.38	--	--

EUG 15 Startup/Shutdown Vents

The ammonia plant startup and shutdown vents (EUs SP73-1 and SP73-2) have the potential to emit large quantities of CO for a short period of time from pressure control valves located within each plant. A total of 63 hours/year was assumed. Potential emission rates are based on process flow rates and stream composition data.

Potential methanol emissions from the CO_2 stripping towers (EU 1102E1 and 1102E2) were estimated based on the data from the June 2006 stack test for the #1 CO_2 stripping tower. The stack test results were scaled up to the maximum CO_2 production rate. It was assumed that methanol emissions from the #2 CO_2 stripping tower are equivalent to the #1 CO_2 stripping tower. A total of 36 hours/year from each vent was assumed PTE calculation purposes. Note that the potential methanol emissions are estimates only and are not intended to be used as individual emission unit limits in the permit since methanol emissions have been included in the Plant-wide cap.

The Process Condensate Stripper (EU 308E) has the potential to emit methanol only during unanticipated, unforeseen emergencies. Typically, this source does not vent to the atmosphere due to the process condensate recycle system. Potential methanol emissions from EU 308E have been estimated based on the maximum anticipated condensate flow rate and maximum anticipated methanol content. For annual emissions it was conservatively estimated that the plant would experience 36 hours per year of unforeseen releases. During plant maintenance, process condensate may be routed to the zero discharge pond. From the zero discharge pond, the water is sent to the wastewater concentrator. During these events, the methanol in the condensate may be evaporated from the wastewater concentrator; however, methanol emissions have been accounted for under the plant-wide cap as if they were emitted from the vent rather than the wastewater concentrator.

Point ID	Emission Unit	CO		Methanol	
		lb/hr	TPY	lb/hr	TPY*
15-9151	Ammonia Plant 1 SU/SD Vent No.1	10,962.8	345.3	--	--
15-9154	Ammonia Plant 2 SU/SD Vent No.1	10,962.8	345.3	--	--
15-9120	CO_2 Stripping Tower 1 (PIC30-1)	--	--	35.8	0.6
15-9121	CO_2 Stripping Tower 2 (PIC30-2)	--	--	35.8	0.6
15-9109	Process Condensate Stripper	--	--	131.9	2.4
TOTALS		**21925.6**	**690.6**	**203.5**	**3.6**

*****Annual emissions of methanol have been included in the plant-wide cap, and any one source may emit up to 9.9 TPY so long as all sources combined emit less than 9.9 TPY.

Note that the potential methanol emissions are estimates only and are not intended to be used as individual emission unit limits in the permit since methanol emissions have been included in the plant-wide cap.

Insignificant Activities

Estimates of emissions from the emergency generator and the fire water pump are based on 500 hours of operations per year, with emission factors from Table 3.3-1 of AP-42 (10/96).

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
460-hp Generator	1.1	0.3	0.9	0.2	14.3	3.6	1.2	0.3	3.1	0.8
140-hp Fire Pump	0.3	0.1	0.3	0.1	4.3	1.1	0.4	0.1	0.9	0.2

Emissions estimates from the portable fertilizer mixing unit, which is owned, operated, and maintained by a contractor, are based on 350 hours/year anticipated operation and manufacturer's data.

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
Portable 475-hp Engine	0.3	0.1	0.2	0.03	8.6	1.5	0.3	0.06	1.7	0.3

FACILITY-WIDE CRITERIA POLLUTANT EMISSION SUMMARY (PTE)

EUG	Description	PM_{10}		SO_2		NO_X		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
EUG 2A	Ammonia Plant #1	14.0	45.2	27.1	4.7	184.2	717.2	7.5	32.2	113.0	492.1
EUG 2B	Ammonia Plant #2	14.1	46.3	27.3	4.8	188.7	734.4	7.6	33.0	115.7	503.9
EUG 3	Heaters/Boilers > 50 MMBTUH	3.4	11.7	0.3	0.8	62.4	210.2	2.6	8.6	38.6	129.8
EUG 4	Heaters/Boilers < 50 MMBTUH	0.8	3.2	0.06	0.2	9.8	42.6	0.6	2.4	8.2	35.8
EUG 5	Conditioning Agent Storage Tank	--	--	--	--	--	--	1.7	0.1	--	--
EUG 6	Urea Granulators	19.80	86.76	--	--	--	--	3.72	8.96	--	--
EUG 7	Urea Synthesis Vents	1.87	7.92	--	--	--	--	--	--	3.86	16.41
EUG 10	CO_2 Stripping Towers	--	--	--	--	--	--	--	--	11.6	50.8
EUG 11	Nitric Acid Plant	--	--	--	--	5.0	21.9	--	--	--	--
EUG 12	UAN Plant	2.6	11.0	--	--	--	--	--	--	0.1	0.5
EUG 13	Flare	--	--	0.05	0.01	339.3	15.8	80.1	2.3	30.4	3.0
EUG 14	Plant Fugitives	--	--	--	--	--	--	--	--	--	--
EUG 14A	New Fugitives	--	--	--	--	--	--	--	--	--	--
EUG 15	Start-up/Shutdown Vents	--	--	--	--	--	--	158.1	*	21,925.6	690.6
EUG 16	New Cooling Tower	0.42	1.84	--	--	--	--	--	--	--	--
Insignif-icant	Insignificant Activities	1.7	0.5	1.4	0.3	27.2	6.2	1.9	0.5	5.7	1.3
	TOTALS	**79.29**	**214.42**	**56.21**	**10.81**	**816.60**	**1748.30**	**263.82**	**88.06**	**22252.76**	**1924.21**

FACILTY-WIDE HAP EMISSIONS SUMMARY (PTE)

Emission Unit	Formaldehyde		Methanol*	
	lb/hr	TPY	lb/hr	TPY
EUG 1	--	--	--	*
EUG 2A	0.07	0.3	--	--
EUG 2B	0.07	0.3	--	--
EUG 3	0.06	0.1	--	--
EUG 4	0.006	0.02	--	--
EUG 5	1.7	0.1	--	--
EUG 6	0.3	1.3	3.0	*
EUG7	--	--	--	--
EUG 12	--	--	--	--
EUG 14	--	--	--	--
EUG 15	--	--	203.5	*
TOTALS	**2.2**	**2.1**	**206.5**	**9.9**

* Methanol emissions are included in the plant-wide cap, which allows any one source to emit up to 9.9 TPY so long as all sources combined emit less than 9.9 TPY. The cap is addressed in the Specific Conditions for EUG 1.

The following table compares the post-project emissions to 2005-2006 pre-project actual emissions from affected units.

NET EMISSIONS CHANGES (TPY)

EUG	Description	PM_{10}	SO_2	NO_X	VOC	CO
Post-Project Emissions Increases						
14A	New Fugitives	--	--	--	--	--
16	New Cooling Tower	1.84	--	--	--	--
5	Conditioning Agent Tank	--	--	--	0.1	--
6	Urea Granulators	86.76	--	--	8.96	--
7	Urea Synthesis Vents	7.92	--	--	--	16.41
3	Boilers > 50 MMBTUH	2.76	0.2	2.58	0.2	30.78
TOTALS		**99.28**	**0.2**	**2.58**	**9.26**	**47.19**
Pre-Project Actual Emissions (2005-2006)						
14A	New Fugitives	--	--	--	--	--
16	New Cooling Tower	--	--	--	--	--
5	Conditioning Agent Tank	--	--	--	0.1	--
6	Urea Granulators	58.20	--	--	0.9	--
7	Urea Synthesis Vents	4.8	--	--	--	9.4
TOTALS		**63.00**	**0.0**	**0.0**	**1.0**	**9.40**
NET CHANGES		**36.28**	**0.2**	**2.58**	**8.26**	**37.79**
PSD Levels of Significance		**15**	**40**	**40**	**40**	**100**
PSD Review Required?		**Yes**	**No**	**No**	**No**	**No**

The project is above PSD levels of significance for PM_{10}. Full PSD review of emissions consists of the following:

A. Determination of best available control technology (BACT)
B. Evaluation of existing air quality
C. Evaluation of PSD increment consumption
D. Analysis of compliance with National Ambient Air Quality Standards (NAAQS)
E. Pre- and post-construction ambient monitoring
F. Evaluation of source-related impacts on growth, soils, vegetation, visibility
G. Evaluation of Class I area impact

SECTION VI. BEST AVAILABLE CONTROL TECHNOLOGY REVIEW

OAC 252:100-8-31 states that BACT "*means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each regulated NSR pollutant which would be emitted from any proposed major stationary source or major modification which the Director, on a case-by-case basis, taking into account energy, environmental, and economic impacts or other costs, determines is achievable for such source or modification….*"

A BACT analysis is required to assess the appropriate level of control for each new or physically modified emissions unit for each pollutant that exceeds the applicable PSD Significant Emissions Rate (SER). Emissions of PM_{10} exceed the applicable SER.

The U.S. EPA has stated its preference for a "top-down" approach for determining BACT and that is the methodology used for this permit review. After determining whether any New Source Performance Standard (NSPS) is applicable, the first step in this approach is to determine, for the emission unit in question, the available control technologies, including the most stringent control technology, for a similar or identical source or source category. If the proposed BACT is equivalent to the most stringent emission limit, no further analysis is necessary.

If the most stringent emission limit is not selected, further analyses are required. Once the most stringent emission control technology has been identified, its technical feasibility must be determined; this leads to the reason for the term "available" in Best Available Control Technology. A technology that is available and is applicable to the source under review is considered technically feasible. A control technology is considered available if it has reached the licensing and commercial sales stage of development. In general, a control option is considered applicable if it has been, or is soon to be, developed on the same or similar source type. If the control technology is feasible, that control is considered to be BACT unless economic, energy, or environmental impacts preclude its use. This process defines the "best" term in Best Available Control Technology. If any of the control technologies are technically infeasible for the emission unit in question, that control technology is eliminated from consideration.

The remaining control technologies are then ranked by effectiveness and evaluated based on energy, environmental, and economic impacts beginning with the most stringent remaining technology. If it can be shown that this level of control should not be selected based on energy, environmental, or economic impacts, then the next most stringent level of control is evaluated. This process continues until the BACT level under consideration cannot be eliminated by any energy, environmental, or economic concerns.

The five basic steps of a top-down BACT review are summarized as follows:

Step 1. Identify Available Control Technologies
Step 2. Eliminate Technically Infeasible Options
Step 3. Rank Remaining Control Technologies by Control Effectiveness
Step 4. Evaluate Most Effective Controls Based on Energy, Environmental, and Economic impacts
Step 5. Select BACT and Document the Selection as BACT

Technologies and emissions limit data were identified by the applicant and by AQD through a review of EPA's RACT/BACT/LAER Clearinghouse (RBLC) as well as EPA's New Source Review (NSR) and Clean Air Technology Center (CATC) websites, recent state BACT determinations for similar facilities, and vendor-supplied information.

Particulate Matter (PM / PM_{10}) Emissions

The new or modified emissions units subject to a BACT analysis are the three urea granulators, new cooling tower, and materials handling/storage and railcar loading ("new fugitives").

A. UREA GRANULATORS

Step 1 - Identify All Control Technologies

PM emissions that are less than 10 microns in diameter are referred to as PM_{10}. The following add-on controls were identified as technologies available to control PM emissions from solid nitrogen fertilizer production facilities.

Fabric Filter Baghouse

A fabric filter baghouse (FF) removes solids from the flue gas by drawing dust-laden flue gas through a bank of filter tubes. A filter cake, composed of the removed particles, builds up on the dirty side of the bag. Periodically, the cake is removed through physical mechanisms such as a blast of air from the clean side of the bag, or mechanical shaking of the bags, which causes the cake to fall. The dust is then collected in a hopper and removed. Fabric filters include reverse gas fabric filters (RGFF) or pulse jet fabric filters (PJFF). In a PJFF, the solids are collected on the outside of the bags. A PJFF can operate at higher air-to-cloth ratios than a reverse gas system. Consequently, a PJFF is smaller and will usually have lower capital costs than a RGFF. The bags in a RGFF, however, can be expected to have a longer service life. Consequently, a RGFF will typically have lower operating costs than a PJFF. For the purposes of this BACT analysis, a distinction is not made between RGFF and PJFF.

Electrostatic Precipitator (ESP)

An electrostatic precipitator (ESP) removes dust or other fine particles from the flue gas by charging the particles inductively with an electric field and then attracting the particles to highly charged collector plates, from which they are removed. An ESP consists of a hopper-bottomed box containing rows of plates forming passages through which the flue gas flows. Centrally located in each passage are emitting electrodes energized with a high-voltage, negative polarity direct current. The voltage applied is high enough to ionize the gas molecules close to the electrodes, resulting in a corona current of gas ions from the emitting electrodes across the gas passages to the grounded collecting plates. When passing through the flue gas, the charged ions collide with, and attach themselves to, fly ash particles suspended in the gas. The electric field forces the charged particles out of the gas stream towards the grounded plates, and there they are collected in a layer. The plates are periodically cleaned by a mechanical rapping system to release the ash layer into ash hoppers as an agglomerated mass. Factors affecting the efficiency of the ESP include flue gas flow rate, resistivity of the ash, plate area, voltage, number of sections, and overall power consumption.

Wet ESP

A wet ESP operates in the same three-step process as a dry ESP: charging, collection, and removal. However, the removal of particles from the collecting electrodes is accomplished by washing of the collection plate surface using liquid, rather than mechanical rapping of the plates. A wet ESP is more widely used in applications where the gas stream has high moisture content, is below the dew point, or includes sticky particles.

Wet Scrubbers

Wet scrubbers are widely used in the solid urea manufacturing industry and are preferred over other controls for a variety of reasons, not the least of which is the ability to recycle urea back to the process. Three types of wet scrubbers were analyzed: spray-tower scrubbers, impingement-type scrubbers, and venturi scrubbers. All of these scrubbers work by capturing small solids in a larger water droplet which is then captured in a mist eliminator or equivalent.

Mechanical Collectors followed by Particulate Scrubbers

Other technologies available are mechanical collectors such as centrifugal separators (cyclones). However, these technologies do not achieve the removal efficiency of wet scrubbers.

Step 2-Eliminate Technically Infeasible Options

A review of the RBLC indicates that, for all of the solid urea plants permitted in the United States during the previous 10 years, wet scrubbers are used uniformly.

State/RBLC No.	Date	Company	Control Technology	BACT Level
Louisiana PSD-LA-594	12/15/95	CF Industries	Impingement wet scrubber	95%
Mississippi 3020-00010	1/11/06	Terra Industries	Spray tower wet scrubber	90%
Mississippi 3020-00010	1/11/06	Terra Industries	Orifice-type wet scrubber	99%
Mississippi 3020-00010	1/11/06	Mississippi Chemical	Orifice-type wet scrubber	90%

The urea to be handled is an organic material and quite sticky as well as hygroscopic (absorbs water from surrounding gases. Both properties result in urea PM sticking to fabric filters, “blinding” them, and not being recoverable.

The stickiness also creates similar problems in dry ESPs, where the dust collected from an exhaust stream cannot be readily recovered, resulting in accumulation in the ESP. Although cyclones are somewhat less efficient than wet scrubbers, they appear to be equally vulnerable to plugging.

Theoretically, wet ESPs could collect sticky material, but the RBLC database does not show any applications. Wet ESPs, therefore, are not demonstrated technology for this application.

Step 3-Rank Remaining Control Technologies by Control Effectiveness

The highest-efficiency feasible control technology is wet scrubbing; several different wet scrubber designs are feasible.

Step 4-Evaluate Most Effective Controls for Energy, Environmental, and Economic Impacts

The applicant has selected wet scrubbing as the control technology for control of PM emissions, which is considered the best technology available. The units are currently equipped with spray tower wet scrubbers.

Step 5-Select BACT and Document the Selection as BACT

The high-efficiency spray tower wet scrubbers currently in place are acceptable as BACT for the modified urea granulators. The efficiency is approximately 90% but not precisely known.

B. SOLIDS HANDLING AND LOADING

Step 1 - Identify All Control Technologies

The BACT analysis identified the following control options:

1. Fabric Filters
2. Full or partial enclosures
3. Sock filters
4. Conditioning agents

It should be noted that some operations, especially the loading operations, will have long periods of inactivity interspersed with near-maximum short-term operations. These load swings complicate the control technology analysis.

Fabric Filter Baghouse

A fabric filter baghouse (FF) removes solids from the flue gas by drawing dust-laden flue gas through a bank of filter tubes. Since this analysis is essentially identical to the analysis for the urea granulators, that text will not be repeated.

Enclosures

Enclosures prevent entrainment of particulates by isolation from wind or other disturbances. They have the advantage of being compatible with most process equipment and can enhance product quality.

Telescoping Chutes

Telescoping chutes are used in intermittently-used operations such as load-out. They are lowered into railcars to minimize disturbance of materials during loading operations.

Conditioning Agents

A conditioning agent in the solids handled can reduce brittleness, thus reduce the tendency to fracture into small particles which are susceptible to becoming airborne. It may also enhance the tendency of small particles to stick to each other, forming larger particles which are more prone to settle out gravimetrically.

Mechanical Collectors followed by Particulate Scrubbers

Other technologies available are mechanical collectors such as centrifugal separators (cyclones). However, these technologies do not achieve the removal efficiency of wet scrubbers, being approximately equal to enclosures (85-95% efficient when working).

Step 2-Eliminate Technically Infeasible Options

A review of the RBLC indicates that, for all of the solid urea plants permitted in the United States during the previous 10 years, sock filters, conditioning agents, and enclosures have all been accepted in the solid fertilizer industry. Most more-involved systems cannot follow load swings for intermittent operations.

Mechanical collectors such as cyclones are not demonstrated technology given the tendency of urea to stick to the cyclone interiors.

Step 3-Rank Remaining Control Technologies by Control Effectiveness

Sock filters provide approximately 95% control. They are not equivalent to fabric filters due to the tendency not to have a good seal between the loading spout and receiving bin.

Enclosures provide approximately 90% control.

The facility adds a conditioning agent as a matter of course.

Step 4-Evaluate Most Effective Controls for Energy, Environmental, and Economic Impacts

The applicant has selected enclosures (full or partial, depending on the operation) as the control technology for control of PM emissions from handling and storage. These units prevent emissions to the atmosphere while maintaining product quality. There is a minimum of waste created by these options.

Telescoping chutes and enclosures will be used for loading operations.

Step 5-Select BACT and Document the Selection as BACT

Enclosures of handling and storage facilities, and sock filters on loading operations, are acceptable as BACT.

C. COOLING TOWER

Particulate emissions occur from the cooling tower as a result of the total solids (suspended and dissolved metals and minerals) in the water being entrained in the air stream. Mist eliminators prevent most of the water from escaping out the top of the tower; however, some water droplets (with dissolved and suspended particulate) do escape the cooling tower and are referred to as "drift". For this analysis, as a simplifying conservative assumption, all of the particulate resulting from the drift is considered to be PM_{10}.

Step 1-Identify All Control Technologies

There are several ways to reduce drift (and resulting PM and PM_{10}) emissions from cooling towers. Process modifications could be considered, including elimination of a cooling tower by using an available water source such as a stream or nearby water reservoir or lake to provide enough water to use "once through" cooling. A standard cooling tower is similar to a once through system except the water is recycled in the tower. Another alternative is the use of air fin cooling. A third alternative is to use a hybrid system that combines some aspects of a wet and a dry system. A fourth option is the installation of modern high efficiency drift eliminators on the cooling tower.

Step 2-Eliminate Technically Infeasible Options

"Once through" cooling is not a feasible option in this location. Several studies have shown that both the dry cooling system (air fins) and the wet/dry hybrid system have an impact on system performance (i.e., reduce the available power output) during the hottest parts of the year. The only feasible option at this location is a wet cooling tower with high efficiency drift eliminators. Since only one control option is feasible, Steps 3 and 4 are not necessary.

Step 5-Select BACT and Document the Selection as BACT

The applicant proposed that high efficiency drift eliminators, with the capability to reduce the potential drift to a maximum of 0.0005% of the circulating water flow rate, is BACT for PM_{10} control at the cooling tower. The proposed control technology is acceptable to AQD as BACT. Compliance will be demonstrated by vendor guarantees.

SECTION VII. AIR QUALITY IMPACTS

Net emission increases of PM_{10} are greater than the significant emission rate threshold of PSD. Therefore, an ambient air impact analyses is required for PM_{10}. First, air dispersion modeling is performed to determine if any air impacts will exceed a significant ambient impact level (SAIL) or monitoring exemption level. If a SAIL is exceeded, then a full impact analysis (consisting of compliance with the NAAQS and with PSD increment consumption) is required for that pollutant. If a SAIL is not exceeded, then no further air quality analysis is required for that pollutant.

A. Description of Air Quality Dispersion Model and Procedures

Dispersion Models and Inputs

The air quality modeling analyses employed the latest versions of EPA's AERMOD dispersion model to determine ambient concentrations of PM_{10} at and beyond the facility fence line. The AERMOD model was used to determine impacts at a discrete set of off-site receptors. The models and associated input options are presented in the following sections.

The AERMOD model was used for all pollutants. The default options selected are given below:

Model Input Options

1. The regulatory default options:
   a) Stack-tip downwash (except for Schulman-Scire downwash).
   b) Buoyancy-induced dispersion (except for Schulman-Scire downwash).
   c) No gradual plume rise.
   d) Calms processing routine.
   e) Default wind speed profile exponents.
   f) Default vertical potential temperature gradients.
   g) Upper-bound concentration estimates for sources influenced by building downwash from super-squat buildings.
2. Rural dispersion parameters (see below).
3. Building downwash parameters (see following).

AERMOD overpredicts fugitive impacts. Therefore, the wind factor card option, "EMISFACT WSPEED," was utilized for better accuracy.

Land Classification

Land use within three kilometers of the facility was classified according to the method developed by Auer (1978) using the most recent version of the United States Geological Survey (USGS) 7.5-minute topographic maps for the Enid East, Enid Southeast, Breckinridge, and Fairmont quadrangles. The land use within a 3 kilometer radius is almost exclusively rural. Since more than 50 percent of the land use is classified as rural, rural dispersion coefficients were used.

Building Downwash

EPA's Building Profile Input Program (BPIP-Prime) was used to compute Good Engineering Practice (GEP) stack heights for each emission source (see "GEP Stack Height and Plume Downwash" following). The program then computed direction-specific building dimensions (height and projected width) for each non-GEP stack to be modeled. These dimensions were used by the AERMOD model to simulate downwash effects for each point source exhausting at heights less than GEP stack height.

Receptors

Receptors were modeled along the facility fence line and at off-site locations within a five-by-five kilometer Cartesian grid to determine the significant impact area for each pollutant. The receptors along the facility fence line were placed at 100-meter intervals. The grid incorporates the following spacing between receptors: 100 meters out to one kilometer and 500 meters out to five kilometers from the fenceline. The significant impact area did not exceed 5 kilometers from the fenceline for any of the steady-state emission rates; therefore, it was not necessary to extend the grid to encompass the entire SIA.

Receptor elevations along the fence line and at the grid locations were obtained from the 7.5-minute USGS topographic maps and 7.5-minute USGS Digital Elevation Models (DEM) for the area.

Meteorology

Meteorological data representative of the site is required as an input to the AERMOD dispersion model to estimate ambient impacts. In lieu of an on-site data set, dispersion modeling with five years of meteorological data is required. The meteorological data was processed using AERMOD Version 06341 and Integrated Surface Hourly (ISH) data from Guthrie, OK (KGOK – 723537), upper air (UA) data from Norman, OK (OUN - 3948), and Mesonet data from Breckenridge, OK for the years 2001-2005. Oklahoma Mesonet data was provided to the AQD courtesy of the Oklahoma Mesonet, a cooperative venture between Oklahoma State University and The University of Oklahoma and supported by the taxpayers of Oklahoma. These data were processed using AERMET into an AERMOD-ready format and include wind speed and direction, stability, temperature, and mixing heights.

GEP Stack Height and Plume Downwash

The stack height regulations promulgated by EPA on July 8, 1985 (50 CFR 27892), established a stack height limitation to assure that stack height increases and other plume dispersion techniques would not be used in lieu of constant emission controls. The regulations specify that GEP stack height is the maximum creditable stack height which a source may use in establishing its applicable State Implementation Plan (SIP) emission limitation. For stacks uninfluenced by terrain features, the determination of a GEP stack height for a source is based on the following empirical equation:

$$H_g = H + 1.5L_b$$

where:

H_g = GEP stack height;
H = Height of the controlling structure on which the source is located, or nearby structure; and
L_b = Lesser dimension (height or width) of the controlling structure on which the source is located, or nearby structure.

Both the height and width of the structure are determined from the frontal area of the structure projected onto a plane perpendicular to the direction of the wind. The area in which a nearby structure can have a significant influence on a source is limited to five times the lesser dimension (height or width) of that structure, or within 0.5 miles (0.8 kilometers) of the source, whichever is less. The methods for determining GEP stack height for various building configurations have been described in EPA's technical support document (EPA, 1985).

Since the heights of exhaust stacks at the facility are less than the respective GEP stack heights, a dispersion model to account for aerodynamic plume downwash was necessary in performing the air quality impact analyses.

Since downwash is a function of projected building width and height, it is necessary to account for the changes in building projection as they relate to changes in wind direction. Once these projected dimensions are determined, they can be used as inputs to the AERMOD model.

Downwash was accounted for in the ambient air quality modeling by entering all building locations and dimensions into the Building Profile Input Program – Prime (BPIP-PRIME) developed by the United States Environmental Protection Agency (USEPA). BPIP-PRIME calculates all direction specific building data required by the air dispersion model to enable it to include the appropriate building downwash algorithm into the calculations. The BPIP-PRIME output used in the analysis is from the most recent version of BPIP-PRIME dated 04274.

SIL Modeled Emission Rates and Stack Parameters

A worst-case operating scenario representative of normal operating conditions was determined to assess short-term PM_{10} impacts using the AERMOD model. Because short-term PM_{10} emissions are not varied with load, ambient impacts were assessed for each source at 100 percent load. These impacts were assessed at an array of receptors, in which the elevation at each receptor was assumed to be the greatest elevation at that distance in any direction from the facility. The dimensions of a nearby building were used to simulate downwash effects on the stacks. This structure was determined to result in maximized building downwash effects for the stacks by the BPIP software described previously.

The modeled stack point source parameters and emission rates for the Enid facility are shown below.

Source	Stack Height (ft)	Stack Diameter (ft)	Stack Flow (ACFM)	Stack Temperature (°F)	PM_{10} Emissions lb/hr	
					SIL	NAAQS
Granulator 1	125	3.0	60,698	103	2.18	6.60
Granulator 2	125	3.0	60,698	103	2.18	6.60
Granulator 3	125	3.0	60,698	103	2.18	6.60
HP Vent	217	0.33	749	212	0.66	1.40
LP Vent	217	2.33	42	104	0.22	0.47
CT Cell 1	47	25	754,615	78	0.21	0.21
CT Cell 2	47	25	754,615	78	0.21	0.21
Boiler 1	50	3.17	23,918	323	0.32	0.90
Boiler 2	50	3.17	23,918	323	0.32	0.90

For NAAQS, 27 other sources were modeled, including 5 which are located at other facilities.

B. Significant Impact Analysis

An analysis was conducted to determine if PM_{10} emissions from the proposed modification would result in off-site ambient impacts at levels greater than the significant ambient impact levels (SAIL) and/or the monitoring significance levels. The SAIL and monitoring significance levels for these pollutants are presented following.

Ambient Air Modeled Impacts

Pollutant	Averaging Period	Maximum Impacts (ug/m^3)	Significant Ambient Impact Level (ug/m^3)	Monitoring Significance Level (ug/m^3)
PM_{10}	24-hour	8.58	5	10
	annual	1.61	1	-

Modeled impacts of PM_{10} (24-hour and annual average) emission increases associated with the proposed project exceed the SAIL; therefore, a full impact analyses for these pollutants was required.

C. Ambient Monitoring

The ambient impact "monitoring de minimis level" for PM_{10} is 10 $\mu g/m^3$ (24-hour average). Since the highest modeled impact from this modification (8.58 $\mu g/m^3$) does not exceed the PM_{10} de minimis level, the need for ambient monitoring data is not indicated.

D. Full Impact Analysis (NAAQS and PSD Increment)

PM_{10}

A full impact analysis requires the development of emission inventories of nearby sources. Nearby sources are defined as any point source expected to cause a significant concentration gradient within the significant impact area (SIA). This includes sources in adjacent states.

There are two steps required to determine which facilities qualify as "nearby facilities." First, the region in which all sources must be initially classified as "nearby sources" must be defined. This region extends to 50 kilometers beyond the largest pollutant-specific SIA. A pollutant-specific SIA is the region within which the pollutant impacts are expected to exceed the SAIL. In this case, the PM_{10} SIA extends approximately 1 kilometer from the center of the facility. All facilities that emit the pollutant for which the full analysis is being performed and that fall within a 50 kilometer radius of the pollutant-specific SIA are to be considered for inclusion in the modeling analysis. Therefore, for this analysis, all sources of PM_{10} within 51 kilometers of the facility are to be considered nearby sources unless they are otherwise disqualified.

The second step in determining nearby sources requires calculating a ratio of the total facility emissions to the distance from the proposed facility. AQD has issued guidance stating that use of the "10-D Rule" is acceptable for eliminating nearby sources. According to the guidance document, "when a nearby source's emissions (TPY) are less than 10 times the distance between the nearby source and the source in question (in kilometers), that source may be designated a background source and not modeled." All sources except for the Oklahoma Gas & Electric Sooner Power Station and the Great Lakes Carbon Kremlin plant were excluded using this method. Even though OG&E and GLC are more than 50-km from the Koch Nitrogen plant, they were included at the request of AQD.

Background concentrations for PM_{10} were taken from a monitoring station in Oklahoma City, Oklahoma. That station is considered to provide conservative background concentrations for the proposed project.

Modeling Results

The maximum predicted impacts for PM_{10} (24-hour and annual average) for the NAAQS modeling are summarized following. The highest 6^{th}-high (Pre-1997 Method) over five years of data was used for the 24-hr averaging period analysis for PM_{10}. The highest average concentration over five years was used for the PM_{10} annual standards. As shown, the sum of the predicted impacts and background concentrations are less than the corresponding NAAQS. Therefore, the proposed modification, in conjunction with existing sources, will not cause or contribute to a violation of the NAAQS standard for PM_{10} (all averaging times).

NAAQS Model Results

Pollutant	Averaging Time	Impact (ug/m^3)	Background (ug/m^3)	Background + Impact (ug/m^3)	NAAQS (ug/m^3)
PM_{10}	24-hour [A]	29.55	50	79.6	150
	Annual [B]	6.69	25	31.7	50

A. Values are highest second high
B. Values are the highest average concentration over 5-year average

The increment modeling results for PM_{10} (24-hour and annual average) are summarized in the table following. The PSD increment analysis compares all increment consuming emission increases in the area of impact since the baseline date against the available increment. The amount of available increment is based on other sources constructed within the area of impact since the baseline date. The minor source baseline date was triggered for all counties within the radius of impact by an earlier project. Minor increases and decreases at existing major facilities may impact the increment consumption prior to the minor source baseline date. The highest 2^{nd}-high over each of five years of data was used for the 24-hr averaging period analysis for PM_{10}. The highest average concentration over five years was used for the PM_{10} annual standards. As shown in the table, the predicted impacts are less than the corresponding available PSD Class II increment. Therefore, the proposed modification, in conjunction with existing sources, will not cause or contribute to a violation of any PSD increment standard for PM_{10} (all averaging times). Adequate increment is available for the proposed modification and other nearby increment consumers.

Increment Modeling Results

Pollutant	Averaging Time	Impact (ug/m^3)	Available PSD Class II Increment (ug/m^3)
PM_{10}	24-hour [A]	28.6	30
	Annual [B]	6.2	17

A. Values are highest 6^{th}-high
B. Values are the highest 5-year average

SECTION VIII. ADDITIONAL PSD IMPACTS ANALYSES

Additional impact analyses were conducted to assess the impairment to Class I areas, visibility, soils, and vegetation that would occur as a result of the modification and any commercial, residential, industrial, and other growth associated with the facility. These analyses are discussed in the following sections.

Class I Area Impacts Analysis

An air quality analysis was performed on the proposed modification to demonstrate that the project will comply with PSD permitting requirements for Class I areas. The modeling analysis evaluated air quality and air quality related value (AQRV) impacts at the Wichita Mountains Wildlife Refuge, located approximately 194 kilometers or approximately 125 miles to the southwest of the Enid facility. A Class I area is an area of the country with special national or

regional value from a natural, scenic, recreational, or historic perspective. These Class I areas are afforded special protection to minimize the impacts of new sources on their air quality.

Given the distance and right angle to the prevailing winds, no Class I area impact was conducted beyond showing the distance between Enid and the Wichita Mountains Wildlife Refuge.

Visibility Analysis

The project is not expected to produce any perceptible visibility impacts in the vicinity of the facility. EPA computer software for visibility impacts analyses, intended to predict distant impacts, terminates prematurely when attempts are made to determine close-in impacts. It is concluded that there will be no or minimal impairment of visibility resulting from the facility's emissions. Given the limitation of 20 percent opacity of emissions, and a reasonable expectation that normal operation will result in less than 20 percent opacity, no local visibility impairment is anticipated.

Growth Analysis

A growth analysis is intended to quantify the amount of new growth that is likely to occur in support of the facility and to estimate emissions resulting from that associated growth. Associated growth includes residential and commercial/industrial growth resulting from the modification to the facility. Residential growth depends on the number of new employees and the availability of housing in the area, while associated commercial and industrial growth consists of new sources providing services to the new employees and the facility. The building phase will last approximately one year. Construction employment of approximately 200 workers is expected over the course of the construction period. Increased employment, reflecting full-time jobs directly tied to the increased operation of the Urea plant, should be negligible. This will result in no increased secondary employment created by the increased activity of the facility.

Ambient Air Quality Analysis

The additional impacts analysis requires that all regulated pollutants be included in an ambient air quality analysis. The preceding sections describe the ambient air quality analysis conducted to demonstrate that emissions of PM_{10} from the Enid facility will result in ambient impacts less than the applicable NAAQS and PSD increments.

Soils & Vegetation Analyses

The potential effects of PM_{10} produced by the proposed expansion on the nearby vegetation and soil were examined. The potential effects of the air emissions to vegetation within the immediate vicinity were compared to scientific research examining the effects of pollution on vegetation. Damage to vegetation often results from acute exposure to pollution, but may also occur after prolonged or chronic exposures. Acute exposures are typically manifested by internal physical damage to leaf tissues, while chronic exposures are more associated with the inhibition of physiological processes such as photosynthesis, carbon allocation, and stomatal functioning.

The most obvious effect of particle deposition on vegetation is a physical smothering of the leaf surface. This will reduce light transmission to the plant, in turn causing a decrease in photosynthesis. Modeling results have shown that PM_{10} increment is still available after construction, and modeled values are almost one half less than the NAAQS level for 24-hour impacts including background. These levels are considered low, so it is highly unlikely that particulate matter emissions will impact vegetation adjacent to the Enid plant. The PM itself is agricultural fertilizer, so there should be beneficial instead of adverse impacts in the vicinity of the Enid plant.

Based upon the results, it is concluded that the construction of the proposed project will not have a significant adverse impact on the surrounding soil and vegetation.

SECTION IX. INSIGNIFICANT ACTIVITIES

The insignificant activities identified in the application (submitted July 30, 2004) and listed in OAC 252:100-8, Appendix I, are summarized below. Additionally, the plant may operate sources of trivial emissions that are not required to be listed in the permit or permit application. Appropriate recordkeeping of activities indicated below with an asterisk ("*") is specified in the Specific Conditions.

1. * Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel, which are either used exclusively for emergency power generation or for peaking power service not exceeding 500 hours per year. The plant operates one (1) diesel-fired emergency generator and one (1) diesel-fired water pump, which are in this category.
2. Various space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). In addition, the plant operates one (1) glycol dehydrator reboiler rated at 1.5 MMBTUH. Other space heaters, boilers, or process heaters may be used in the future.
3. Emissions from stationary internal combustion engines rated less than 50-hp output. None identified but may be used in the future.
4. * 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 plant has equipment for dispensing gasoline and diesel. The facility operates one (1) 1,128 gallon diesel storage tank, and one (1) 1,128 gallon gasoline storage tank used to fuel plant vehicles/equipment.
5. Gasoline and fuel handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards, and standards under 252:100-37-15, 39-30, 39-41, and 39-48. None identified but may be used in the future.
6. Emissions from condensate tanks with a design capacity of 400 gallons or less in ozone attainment areas. None identified but may be used in the future.
7. * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The plant operates one (1) 2,961 gallon compressor oil storage tank, one (1) 1,125 gallon diesel storage tank, one (1) 264 gallon diesel fuel tank, and one (1) 576 gallon diesel fuel tank, which are in this category. Other similar tanks may be used in the future.

8. Cold degreasing operations utilizing solvents that are denser than air. There are currently seven (7) parts washers located on-site using solvents that are denser than air, and others may be added in the future.
9. Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrode. These activities are conducted as a part of routine maintenance, which are considered trivial activities and records will not be required.
10. Hazardous waste and hazardous materials drum staging areas.
11. Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works (POTW). Stacks or vents for sanitary sewer plumbing traps are also included (i.e. lift station).
12. Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The facility has exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas, and others may be used in the future.
13. 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. None identified but may be used in the future.
14. * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant. Below is a list of activities that have the potential to emit less than 5 TPY (actual) of any criteria pollutant and other activities may be used in the future.

    - Gasoline storage tank (1)
    - Nitric acid tank (1)
    - UAN tanks (2)
    - UAN loading of trucks and railcars
    - APP portable batch mixing operations
    - Lime silos (2)
    - Conditioning agent storage tank (1)

SECTION X. 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 and previous permit.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day. Within ten (10) working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. In addition, if the owner or operator wishes to be considered for the exemption established in 252:100-9-3.3, a Demonstration of Cause must be submitted within 30 calendar days after the occurrence has ended. Written reports can be submitted quarterly if a technological limitation has been demonstrated to ODEQ. The technological limitation demonstration for the UAN plant was submitted to ODEQ on August 8, 2003 (for opacity) and on March 18, 2004 (for NO_X).

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. KNC on occasion conducts fire training for plant personnel. KNC notifies the local fire department of these activities prior to conducting the training.

OAC 252:100-19 (Particulate Matter) [Applicable]
Section 19-12 regulates PM emissions from various industrial processes excluding indirect-fired fuel-burning units. Allowable PM emission rates are specified based on process weight rate. The following table compares process weight rate to the applicable allowable rates.

COMPARISON OF PROCESS PM EMISSIONS TO ALLOWABLE RATES OF OAC 252:100-19

Unit	Process Weight Rate, TPH	Allowable PM Emission Rate of OAC 252:100-19, lb/hr	Anticipated PM Emission Rate, lb/hr
Urea Granulator 1	21.53	32.06	6.60
Urea Granulator 2	21.53	32.06	6.60
Urea Granulator 3	21.53	32.06	6.60
High Pressure Urea Synthesis Vent	66.67	47.30	1.40
Low Pressure Urea Synthesis Vent	66.67	47.30	0.47
Urea Material Handling	425	67.03	--
Urea Railcar Loading	425	67.03	--

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences that 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. Due to the types of fuel burned (natural gas or ammonia plant purge gas) or specific process operations, the following EUGs have little potential to generate opacity (excluding steam, fog, or icy mist from the presence of uncombined water) during normal operations: EUG 2, EUG 3, EUG 4, EUG 5, EUG 7, EUG 10, EUG 13, and EUG 15. Therefore, specific monitoring for these sources is not necessary. Opacity requirements for sources that may have the potential to generate opacity (EUG 6, EUG 12, and EUGs 14/14A) are addressed in the specific conditions of this permit.

OAC 252:100-29 (Fugitive Dust) [Applicable]
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 interfere with the maintenance of air quality standards. The handling and loading of granular urea takes place within enclosed or shrouded areas to minimize the potential for the generation of fugitive dust. Open-bodied trucks and railcars, which are used to transport urea, are covered prior to leaving the plant boundaries. Primary plant roadways are speed-controlled, paved and maintained.

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 gaseous fuel with sulfur content less than 343 ppmv to ensure compliance with Subchapter 31. The permit also allows de minimis quantities (less than 5% of heat input per OAC 252:100-31-25(a)(4)) of used oil to be burned in the Ammonia Plant Primary Reformers.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]

This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NO_x per MMBTU, three-hour average. New fuel burning equipment is defined as fuel-burning equipment that was not in service on February 14, 1972 or any existing fuel burning equipment that was altered, replaced, or rebuilt after February 14, 1972 with some exceptions. For direct fired processes, new fuel burning equipment is defined as fuel-burning equipment that was not in service on July 1, 1977 or any existing fuel burning equipment that was altered, replaced, or rebuilt after July 1, 1977, resulting in an increase in NO_X emissions. The Ammonia Plant primary reformers were initially constructed in 1973 and 1975, which is in between the applicability dates for indirect fired and direct fired units. (KNC questions that those reformers would not be defined as "indirect" fuel-burning equipment, but agrees to the 0.2 lb/MMBTU limit; should any revision or reinterpretation of this rule occur, this statement becomes a reminder to re-evaluate applicability of Subchaper 33.) The following table compares NO_x emissions from the plant's fuel-burning equipment, as calculated above, 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	Anticipated NOx Emission Rate, lb/MMBTU
Ammonia Plant Primary Reformer #1	909.6	0.2	0.20
Ammonia Plant Primary Reformer #2	931.4	0.2	0.20
Ammonia Unit Startup Boiler	144	0.2	0.2
Urea Boiler 1	84	0.2	0.2
Urea Boiler 2	84	0.2	0.2

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]

None of the following affected processes are part of this plant: gray iron foundry, 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 part applies to the 1,000 gallon gasoline storage tank, which is equipped with a permanent submerged fill pipe. The vapor pressure of diesel is less than 1.5 psia; therefore, Part 3 does not apply to the diesel tanks. The conditioning agent storage tank (EUG 5) stores a VOC with a vapor pressure less than 1.5 psia; therefore, Part 3 does not apply to this unit. Ammonia is inorganic, so ammonia storage is not affected by Part 3.

Part 3 requires 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. This plant fills only vehicle gasoline tanks with capacities less than 200 gallons. Therefore, this requirement is not applicable.

Part 5 limits the VOC content of coatings used in coating lines or operations. This plant will not normally conduct coating or painting operations except for routine maintenance of the plant and equipment, which is exempt.
Part 7 also requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The fuel burning equipment at the plant is subject to this requirement.

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

OAC 252:100-8 Part 9	Major Sources Affecting Nonattainment Areas	not in area category
OAC 252:100-15	Mobile Sources	not in source category
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 252:100-29-2	Fugitive Dust/Nonattainment Areas	not in area category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION XI. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]

A new or modified source may be subject to PSD or NSR if it is either a "major stationary source" or a "major modification" to an already existing major stationary source. The plant is considered an existing "major stationary source" under PSD and NSR regulations. Compliance with PSD requirements is discussed in previous sections.

NSPS, 40 CFR Part 60 [Subpart VV Applicable To This Project]

Subpart D (Steam Generating Units) regulates fossil fuel fired steam-generating units with a rated heat input above 250 MMBTUH. The auxiliary burner sections, which are used to generate steam, of the Primary Reformers (EU-101B1 and EU-101B2) are physically constrained to be less than 250 MMBTUH due to plant draft limitations. Therefore, NSPS Subpart D does not apply to EU-101B1 or EU-101B2.

Subpart Db (Steam Generating Units) regulates steam-generating units rated between 100 and 250 MMBTUH that commenced construction, reconstruction, or modification after June 19, 1984. The auxiliary burner section of the Primary Reformers (EU-101B1 and EU-101B2) and the Ammonia Unit Startup Boiler (EU-2202UB) are rated at a heat input capacity greater than 100 MMBTUH. However, these units were constructed prior to the effective date of this subpart and no reconstruction has occurred, nor have any emissions increases occurred as a result of a modification. Therefore, NSPS Subpart Db is not applicable.

Subpart Dc (Steam Generating Units) regulates steam-generating units rated between 10 and 100 MMBTUH that commenced construction, reconstruction, or modification after June 9, 1989. The Urea Boilers (EU-403A and EU-403B) are rated at a heat input capacity between 10 and 100 MMBTUH. However, these units were constructed prior to the effective date of this subpart and no reconstruction has occurred, nor have any emissions increases occurred as a result of a modification. Therefore, NSPS Subpart Dc is not applicable.

Subpart G (Nitric Acid Plants) regulates nitric acid plants that commenced construction, reconstruction, or modification after August 17, 1971. The nitric acid plant was originally constructed in 1968 and was relocated to the current site from Kennewick, Washington in 1990. 40 CFR 60.14(e) specifically excludes a relocation or change in ownership from the definition of modification. The nitric acid plant has not been reconstructed, nor had emissions increases occurred as a result of a physical change since it was originally constructed in 1968. Therefore, NSPS Subpart G does not apply.

Subpart Kb (Volatile Organic Liquids Storage Vessels) regulates volatile organic materials storage tanks with a capacity above 19,183 gallons, which commenced construction, reconstruction, or modification after July 23, 1984. The 54,319-gallon conditioning agent storage tank (EU-D202) is above this de minimis level. However, the tank was constructed prior to 1984 and has not been reconstructed or modified since July 23, 1984.

Subpart VV (Synthetic Organic Chemical Manufacturing) is not applicable. Subpart VV affects synthetic organic chemical manufacturing operations, which commenced construction, reconstruction, or modification after January 5, 1981. Urea is a listed chemical in 40 CFR Part 60.489. However, per 60.480(d)(3), if a facility produces only heavy liquid chemicals from heavy liquid feed or raw materials, it is not subject to 60.482 (LDAR). Subpart VV set standards for components in VOC service, but there is no VOC in the feed and the product is in heavy

liquid service. The urea unit will be subject only to recordkeeping and reporting requirements under 60.486(i) and 60.487.

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. The emergency engines already at this facility pre-date Subpart IIII.

Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines) affects spark ignition (CI) internal combustion engines (ICE) based on power and displacement. There are no stationary SI engines at this facility.

NESHAP, 40 CFR Part 61 [Subparts M and FF Applicable]

Subpart M (Asbestos) regulates asbestos from demolition and renovation activities. Prior to a demolition or renovation activity, owners or operators are required to inspect the affected facility or part of the facility where the renovation and demolition activity will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. For demolition or renovation activities subject to this subpart, owners and operators are required to comply with the standards, including notification requirements, under §61.145.

Subpart FF (Benzene Waste Operations) regulates benzene contaminated wastewater at chemical manufacturing plants. The facility is not subject to control requirements of 40 CFR 61 Subpart FF because the total annual benzene quantity from facility wastewater streams is less than 1 Mg/yr. The plant is required to repeat the determination of total annual benzene quantity whenever there is a change in the process generating the waste that could cause the total annual benzene quantity to increase to 1 Mg/yr or more. The plant is also subject to recordkeeping requirements under §61.356 and reporting requirements under §61.357.

NESHAP, 40 CFR Part 63 [Not Applicable]

Subparts F, G, H and I (Hazardous Organic NESHAP) affect major sources of HAPs. This plant is an area source rather than a major source.

Subpart FFFF (Miscellaneous Organic Chemicals) affects facilities which produce the listed organic chemicals. Ammonia, nitric acid, urea, and UAN are not among the listed chemicals.

Subpart ZZZZ (Reciprocating Internal Combustion Engines (RICE) was signed on February 26, 2004, and affects RICE with a site rating greater than 500 brake horsepower that are located at a major source of HAPs: existing, new, and reconstructed spark ignition 4 stroke rich burn (4SRB) RICE, any new or reconstructed spark ignition 2 stroke lean burn (2SLB) or 4 stroke lean burn (4SLB) RICE, or any new or reconstructed compression ignition (CI) RICE. The emergency generators and fire water pump are smaller than the 500-hp threshold.

Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters. In March, 2007, the EPA filed a motion to vacate and remand this rule back to the agency. The rule was vacated by court order, subject to appeal, on June 8, 2007. No appeals were made and the rule was vacated on July 30, 2007. Existing and new small gaseous fuel boilers and process heaters (less than 10 MMBtu/hr heat rating) were not subject to any standards, recordkeeping, or notifications under Subpart DDDDD.

EPA is planning on issuing guidance (or a rule) on what actions applicants and permitting authorities should take regarding MACT determinations under either Section112(g) or Section 112(j) for sources that were affected sources under Subpart DDDDD and other vacated MACTs. It is expected that the guidance (or rule) will establish a new timeline for submission of section 112(j) applications for vacated MACT standards. At this time, AQD has determined that a 112(j) determination is not needed for sources potentially subject to a vacated MACT, including Subpart DDDDD. This permit may be reopened to address Section 112(j) when necessary.

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. 40 CFR 64.5(b) requires the owner or operator to submit a CAM plan (if applicable) as part of the application for the renewal for a Part 70 permit. The Nitric Acid Plant stack is subject to emission limitations in this permit and is equipped with a non-selective catalytic reduction system, which reduces emissions of nitrogen oxides (NO_X). KNC is required by this permit to operate a continuous emissions monitoring system (CEMS) to record emissions of NO_X from the Nitric Acid Plant stack on a continuous basis. In accordance with 40 CFR 64.2(b)(vi), CAM requirements do not apply to units equipped with a permit-required CEMS. CAM for the urea granulators will be required for permit renewal.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Applicable]
The plant has substances regulated under 40 CFR Part 68 present in quantities greater than the threshold quantities; therefore, 40 CFR Part 68 is applicable. A Risk Management Plan was submitted on June 16, 1999, and determined to be complete by EPA. KNC has prepared the plant's updated RMP and it was submitted by the June 21, 2004 deadline. KNC is in compliance with requirements of this part, including registration and submission of an RMP. More information on this federal program is available on the web page: *www.epa.gov/ceppo*.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F 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.
This facility does not utilize any Class I & II substances.

SECTION XII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a **Tier II** based on being the application for a construction permit for a significant modification. The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operations upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the land. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page: www.deq.state.ok.us/.

The applicant published the "Notice of Filing a Tier II Application" in the *Enid News and Eagle*, a daily newspaper circulated in Garfield County, on August 7, 2007. The notice stated that the application was available for public review at the Enid Public Library, 120 West Maine Ave, Enid, OK or at the DEQ Air Quality Office in Oklahoma City. The applicant also published the "Notice of Draft Tier II Permit" in the *Enid News and Eagle*, a daily newspaper circulated in Garfield County, on March 17, 2008. The notice stated that both the application and draft permit were available for public review at the Enid Public Library. The permit was approved for concurrent EPA/public review with EPA review commencing on March 14, 2008. This facility is located within 50 miles of the Oklahoma - Kansas Border; the state of Kansas was notified of the draft permit. No comments were received from the public, the state of Kansas, or EPA Region VI.

Fee Paid

Major source construction permit fee of $1,500.

SECTION XIII. SUMMARY

The applicant has demonstrated the ability to comply with applicable state and federal air pollution control rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Koch Nitrogen Company
Enid Nitrogen Plant **Permit No. 99-092-C (M-2)(PSD)**

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on July 25, 2007, and at various other times as requested. The Evaluation Memorandum dated April 29, 2008, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to the conditions contained herein.

1. Point of emissions and applicable emissions limitations. [OAC 252:100-8-6(a)(1)]

EUG 1 Plant-wide Emissions Cap

A. The permittee shall limit actual annual emissions of methanol from the plant to 9.9 TPY (calculated on a 12-month rolling total). Actual annual plant-wide methanol emissions shall be calculated each month and the 12-month rolling total shall be determined. Relevant records specified in Specific Condition 5 will be used in the methanol emission calculations, as applicable.
B. The permittee shall tabulate monthly methanol emissions using the methods outlined below or based on equivalent methods as accepted by ODEQ.

    1. Emissions from methanol-containing conditioning agent(s) shall be calculated on a mass balance basis from the weight of conditioning agent(s) added to urea times the weight percent of methanol in the conditioning agent(s). The average weight percent of methanol in the conditioning agent(s) shall be based on a 12-month rolling average.
    2. Emissions from diverting process condensate from the process condensate stripper to the zero discharge pond or emergency venting from the process condensate stripper stack to the atmosphere, shall be calculated based on the methanol concentrations in the condensate times the volume of condensate diverted to the ponds and/or the methanol concentrations exhausted to the atmosphere.
    3. Methanol emissions during plant startup, shutdown, and/or malfunction events from each of the CO_2 strippers (PIC-30 vents) shall be calculated as 0.476 lb methanol per ton CO_2 or based on factors derived for each PIC-30 vent from the most recent ODEQ-approved stack test.

EUG 2 Ammonia Plant Primary Reformers

Location	EU ID	Heat Input*
Ammonia Plant #1	101B1	909.6 MMBTUH
Ammonia Plant #2	101B2	931.4 MMBTUH

*Heat input limitation is for a 12-month rolling averaging period, and includes arch burners, tunnel burners, superheat burners, and auxiliary boiler burners.

Point ID	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
2-9095	101B1	10.2	44.5	0.8	3.5	181.9	717.1	7.4	32.2	112.4	492.1
2-9097	101B2	10.4	45.6	0.8	3.5	186.3	734.3	7.4	32.2	115.1	503.9

A. The above fuel burning equipment shall be fueled by pipeline quality natural gas and ammonia and argon plant purge gas as primary fuels, with up to 23,000 gallons/calendar year of plant generated used oil burned. The permittee is also authorized to process wastewater generated at the CO_2 Plant containing trace amounts of hydrocarbons in the reformers.

B. Emissions of NOx from fuel burning equipment shall not exceed 0.2 lb/MMBtu, 3-hour average. [OAC 252:100-33]

C. Compliance Demonstration: The following requirements demonstrate compliance with the heat input restriction for EUG 2 and with the lb/hr and ton/year limitations for EUG 2.

1. The permittee shall measure natural gas and ammonia plant purge gas flow to the primary reformers. The flow shall be totalized on a monthly basis. The permittee shall adjust fuel flow measurements to compensate for pressure and temperature. Flow-instrumentation shall be calibrated semi-annually.
2. The permittee shall analyze purge gas flow to fuel in each ammonia plant weekly. The permittee shall calculate a monthly average purge gas density and heating value for each ammonia plant based on the weekly gas analyses. The monthly measurements of purge gas flow to fuel shall be adjusted for density using the average density calculated. The permittee shall multiply the heating value calculated for the plant by the adjusted fuel flow measurements to obtain the monthly purge gas to fuel energy usage for each plant.
3. The permittee shall calculate the total fuel energy usage in each plant by adding the total natural gas energy usage for fuel to the purge gas energy usage for fuel for each plant.
4. The permittee shall calculate the average hourly heat input for each plant by dividing the total plant fuel energy usage by the number of hours the plant operated during the month. Monthly calculations shall be used to determine the 12-month rolling average. Compliance with the hourly heat input rating shall be based on a 12-month rolling averaging period.

5. Emissions when burning used oil are considered negligible and heat input values from the combustion of used oil are not required to be included in the above calculations. Additionally, emissions from the burning of used oil are considered negligible and have been specifically excluded from the above emissions limitations.

EUG 3 Heaters/Boilers > 50 MMBTUH

Location	EU ID	EU Name/Model
Ammonia Plant #1	2202UB	Ammonia Unit Startup Boiler
Urea Plant	403A	Urea Boiler No. 1
Urea Plant	403B	Urea Boiler No. 2

Point ID	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
3-9099	2202UB	1.6	3.5	0.1	0.2	28.8	63.0	1.2	2.6	17.8	39.0
3-9100	403A	0.9	4.1	0.1	0.3	16.8	73.6	0.7	3.0	10.4	45.4
3-9101	403B	0.9	4.1	0.1	0.3	16.8	73.6	0.7	3.0	10.4	45.4

A. The fuel-burning equipment shall be fired with pipeline grade natural gas.

B. Emissions of nitrogen oxides from the fuel burning equipment shall not exceed 0.2 lb/MMBtu, three hour average. [OAC 252:100-33-2(a)]

C. Operation of EU 2202UB is limited to 4,380 hours per year annual operation.

D. Compliance Demonstration: Use of pipeline-quality natural gas as the only fuel and having hours of operation less than 4,380 hours per year (12-month rolling total) for EU 2202UB demonstrates compliance with the lb/hr and TPY emissions limitations for EUG 3. 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 annually.

EUG 4 Heaters/Boilers < 50 MMBTUH

Location	EU ID	EU Name/Model
Ammonia Plant #1	102B1	Ammonia Unit Startup Heater No. 1
Ammonia Plant #2	102B2	Ammonia Unit Startup Heater No. 2

Point ID	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
3-9102	102B1	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9
3-9103	102B2	0.4	1.6	0.03	0.1	4.9	21.3	0.3	1.2	4.1	17.9

A. The fuel-burning equipment shall be fired with pipeline grade natural gas.

B. Compliance Demonstration: Use of pipeline-quality natural gas as the only fuel demonstrates compliance with emissions limitations for EUG 4. 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 annually.

EUG 5 Conditioning Agent Storage Tank: The equipment item listed below is considered insignificant.

Location	EU ID	EU Name
Urea Plant	D202	Conditioning Agent Tank

A. Methanol emission limitations and compliance demonstration for this source are addressed in Item A for EUG 1.

EUG 6 Urea Granulators

Point ID	Emission Unit	PM_{10}	
		lb/hr	TPY
6-9104	Granulator 1	6.60	28.92
6-9105	Granulator 2	6.60	28.92
6-9106	Granulator 3	6.60	28.92

A. Compliance Demonstration: Visible emissions observations shall be performed at least monthly during normal plant operations by conducting a plant walkthrough for sources categorized under EUG 6. A record shall be maintained indicating if any opacity or visible emissions (excluding steam, fog, or icy mist from the presence of uncombined water) were observed during the monthly observations. If visible emissions are detected during normal operations, corrective action shall be taken as soon as possible and/or a six-minute opacity reading in accordance with EPA Reference Method #9 (RM 9) will be conducted within three (3) working days.
[OAC 252:100-25-3(b)]

B. All discharges from each urea granulation operation shall be processed by a high-efficiency spray tower wet scrubber or equivalent device for PM emissions control. Each spray tower shall have a minimum liquor flow as will be determined by stack testing when processing discharges from the granulators. [OAC 252:100-8-34(b)(1)]

C. Each day when a granulator is operated, the liquor flow to the associated wet scrubber shall be monitored and recorded. An average liquor flow shall each operating day for each scrubber shall be calculated and recorded. [OAC 252:100-43]

D. Upon operational startup of the modified urea plant, the permittee will be subject to following requirements under 40 CFR 60, Subpart VV for the urea plant, as applicable:

i. 60.486: Recordkeeping requirements
ii. 60.487. Reporting requirements

EUG 7 Urea Synthesis Vents

Point ID	Emission Unit	CO		PM_{10}	
		lb/hr	TPY	lb/hr	TPY
7-9111	High Pressure Vent	3.86	16.40	1.87	7.92
7-9110	Low Pressure Vent				

A. Compliance Demonstration: Compliance with these limits is demonstrated by Urea production of 1,550 TPD (monthly average) or less.

EUG 10 CO_2 Stripping Towers:

Point ID	Emission Unit	CO	
		lb/hr	TPY
10-9120	CO_2 Stripping Tower 1	5.8	25.4
10-9121	CO_2 Stripping Tower 2	5.8	25.4

A. The permittee shall maintain logs of the duration (hours) of venting to the atmosphere during each startup/shutdown, maintenance, or malfunction event from EUG 10.

EUG 11 Nitric Acid Plant:

Point ID	Emission Unit	NO_X	
		lb/hr	TPY
12-9115	Nitric Acid Plant	5.0	21.9

A. Except for periods of maintenance, start-up, shutdown, or malfunction, air emissions from the nitric acid plant shall be processed by an abatement system that reduces NO_X emissions to 79 ppmdv or less, based on a 3-hour averaging period using the arithmetic average from three contiguous one-hour periods. The permittee shall maintain compliance with the NO_X limits at all times, excluding start-up, shutdown, and malfunction events, not to exceed 60 minutes per each occurrence.

B. The permittee shall operate and maintain a continuous emission monitoring system (CEMS) for measuring nitrogen oxides. Except for periods of system breakdowns, repairs, calibration checks, and zero and span adjustments not to exceed a total of 2.5% of the operating hours in a calendar quarter, the CEMS shall be in continuous operation. [OAC 252:100-43]

C. A record shall be maintained of emissions resulting from start-up, shutdown, and malfunction events and the duration of each occurrence. Emissions resulting from start-up, shutdown and malfunction events shall be quantified for this source and reported in the facility's annual emissions inventory.

D. When monitoring shows concentrations in excess of the ppm limit, the owner or operator shall comply with reporting provisions of OAC 252:100-9-3 for excess emissions. If the permittee complies with the reporting requirements of OAC 252:100-9-3.1 and submits a demonstration of cause establishing that an excess emissions event was caused by malfunction, maintenance, start-up, or shutdown, then such excess emissions event shall not be considered a violation of limitations established in permits, rules, or orders of the ODEQ. Due to technological limitations on emissions during the nitric acid plant maintenance, start-up and shutdown, the permittee has submitted an initial written notification of this condition. Quarterly reports are submitted for this source as provided in 252:100-9-3.1(b)(2). Demonstration of cause reports allowed under OAC 252:100-9-3.3(c) may also be submitted with the quarterly reports. Requirements for periods of other excess emissions (during normal operations) include prompt notification to Air Quality and prompt commencement of repairs to correct the condition of excess emissions.
[OAC 252:100-9]

E. Compliance Demonstration: the permittee shall maintain a continuous emission monitoring system (CEMS) for measuring nitrogen oxides. Compliance with the ppm limit will be determined on the basis of a 3-hour averaging period using the arithmetic average from three contiguous one-hour periods. Compliance with NOx emissions rates on a lb/hr basis may be calculated as 0.015 lb/ton/ppm NOx. Except for periods of malfunction, repairs, calibration checks, and zero and span adjustments, the CEM shall be in continuous operation. [OAC 252:100-43]

EUG 12 Urea Ammonium Nitrate (UAN) Plant:

Point ID	Emission Unit	PM_{10}		CO	
		lb/hr	TPY	lb/hr	TPY
12-9116	UAN Plant	2.6	11.0	0.1	0.5

A. Compliance Demonstration: Visible observations shall be performed at least monthly during normal plant operations by conducting a plant walkthrough for sources categorized under EUG 12. A record shall be maintained indicating if any opacity or visible emissions (excluding steam, fog, or icy mist from the presence of uncombined water) were observed during the monthly observations. If visible emissions are detected during normal operations, corrective action shall be taken as soon as possible and/or a six-minute opacity reading in accordance with EPA Reference Method #9 (RM 9) will be conducted within three (3) working days. [OAC 252:100-25-3(b)]

EUG 13 Flare

Location	EU ID	EU Name
Ammonia Plant	222OU	Flare

EU ID	NO_X TPY
222OU	15.8

A. Compliance with the NO_X emission limitation from the flare is based on a 12-month rolling total.

B. The flare shall be fueled with pipeline quality natural gas and/or ammonia plant purge gas as fuel to maintain the pilot, maintain pressure to the flare during idling, and as enrichment fuel if needed. The flare is authorized to flare ammonia, process off-gas, and hydrocarbons.

C. The flare system shall be operated with the following equipment:
   1. Thermocouple or any other equivalent device to detect the presence of a flame.
   2. Air blower to ensure smokeless operation when burning propane or heavier hydrocarbons.
   3. Steam heated vaporizer for vaporization of any liquids from railcar depressurizing or other sources as needed.

D. Compliance Demonstration: Compliance with the NO_X emission limit will be demonstrated based on maintaining throughput records for material (fuel and flared streams) sent to the flare and estimating NO_X emissions (12-month rolling total). Compliance with the equipment standards set forth in Permit Condition C for EUG 13 will be demonstrated through annual verification with Plant personnel that the equipment exists as stated.

EUG 14 Fugitives

Location	EU ID	Point ID	EU Name
Urea Plant	UMH	14-9120	Urea Plant Material Handling/Loading Fugitives

A. Except for truck and railcar loading, urea handling operations shall take place within completely-enclosed buildings, etc., without direct exposure to winds. Railcar and truck loading may take place in partially-enclosed operations which provide some shelter from winds. [OAC 252:100-29]

EUG 14A New Fugitives

EU ID	Point ID	EU Name
UMS	UMS	Urea Materials Storage
UMH	UMH	Urea Materials Handling
UML	UML	Urea Railcar Loading

A. Except for truck and railcar loading, urea handling drop operations shall take place within completely-enclosed buildings, etc.. The new conveyor leading from the existing storage warehouse to the new storage dome shall be at least partially-enclosed. Railcar and truck loading may take place in partially-enclosed operations which provide some shelter from winds. [OAC 252:100-29]

EUG 15 Start-up/Shutdown Vents: The methanol limit and compliance demonstration are addressed in EUG 1, (plant-wide emission cap)

Point ID	Emission Unit	CO	
		lb/hr	TPY
15-9151	Ammonia Plant 1 SU/SD Vent No.1	10,962.8	345.3
15-9154	Ammonia Plant 2 SU/SD Vent No.1	10,962.8	345.3
15-9109	Ammonia Plant #2 Process Condensate Stripper	--	--

A. The permittee shall maintain logs of the duration (hours) of venting to the atmosphere during each startup/shutdown, maintenance, or malfunction event from EUG 15.

B. Compliance Demonstration: records contained in the log specified in Item A for EUG 15 shall demonstrate compliance.

EUG 16 New Cooling Tower

EU ID	Point ID	EU Name
22014E	22014E	New Cooling Tower

A. The new cooling tower shall be constructed with drift eliminators that achieve a drift efficiency of 0.002 percent.

EUG 17 Insignificant Activities

The equipment items listed below are considered insignificant. Although emission limits are not specified, the facility will keep records demonstrating the continued insignificance of these items. Other insignificant emission sources may exist at the facility for which recordkeeping is not required. Recordkeeping shall be maintained for insignificant activities as required by Specific Condition No. 5.

A. The following equipment items are insignificant since they are used for emergencies only with operations less than 500 hours/year.

EU ID	Equipment Name
GEN	Emergency Generator
PUMP	Firewater Pump

B. The following equipment item is considered insignificant since the heat input rating is less than 5 MMBTUH.

EU ID	Equipment Name
R-2401	Glycol Dehydrating Reboiler

C. The equipment listed below is considered insignificant since criteria pollutant emissions are less than 5 TPY.

Emission Point	Equipment Name
APP-IC	APP Portable IC engine*
APP-Portable Unit	APP Portable 10-34-0 Processing Unit*
Diesel	Diesel refueling tank (1)
Gasoline	Gasoline refueling tank (1)
UAN Tanks	UAN Tanks (2)
Lime Silos	Lime Silos (2)
D202	Conditioning Agent Storage Tank (1)

*Equipment owned, operated, and maintained by a contractor.

1. The gasoline storage tank shall be equipped and operated with a permanent submerged fill pipe. [OAC 252:100-37-15(b)]

D. Compliance Demonstration: Relevant records specified in Specific Condition 5 will be used annually, as applicable, to demonstrate continued insignificant status as set forth in Permit Conditions A and C for Insignificant and Trivial Activities. Compliance with the equipment standards set forth in Permit Conditions B and C.1 will be demonstrated through annual verification with plant personnel annually that the equipment exists as stated.

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

3. The permittee shall comply with the provisions of OAC 252:100-9 by reporting qualifying excess emissions. If the permittee complies with the reporting requirements of OAC 252:100-9.1 and submits a demonstration of cause establishing that an excess emissions event was caused by malfunction, maintenance, start-up, or shutdown, then such excess emissions event shall not be considered a violation of air emission limitations established in permits, rules, and orders of the ODEQ.

4. The facility is subject to 40 CFR Part 61, Subpart FF, and shall comply with the following standards: [40 CFR Part 61.340]

A. 61.342: Standards, General
B. 61.355: Test Methods, Procedures, and Compliance Provisions
C. 61.356: Recordkeeping Requirements
D. 61.357: Reporting Requirements

5 The following records shall be maintained on location for inspection by ODEQ regulatory personnel. The required records shall be retained either in printed hard-copy or electronically for a period of at least five (5) years following the dates of recording. [OAC 252:100-43]

A. Records of operation, including operating hours, fuel usage, and fuel energy usage calculations for each of the Primary Reformers (monthly).
B. Analysis of ammonia and argon plant purge gas used as fuel (weekly).
C. Quantities of used oil burned in the primary reformers (monthly).
D. Plant-wide 12-month rolling total methanol emissions calculations (monthly).
E. Records of conditioning agent usage (monthly).
F. Records of conditioning agent methanol content from vendor, with actual annual methanol content calculated on a 12-month rolling average basis.
G. Granular urea production rates (monthly).
H. Granular urea truck and railcar loading rates.
I. Monitoring of NO_x concentrations in exhausts from the Nitric Acid plant (continuous when operated).
J. Nitric acid production rates, expressed as 100% nitric acid.
K. UAN production rates, expressed as 32% nitrogen.
L. Estimated quantities of ammonia, process off-gas, and hydrocarbons sent to the EUG 13 flare (monthly).
M. Venting episodes from EUG 15, including methods, assumptions, and duration of each event as used in calculating emission rates during venting episodes.
N. Visible observations records where required (monthly).
O. Reference Method 9 results as set forth in Item B for EUG 1 (as needed, if applicable).
P. CO_2 production rates (monthly).
Q. Hours of operation of the ammonia unit startup boiler (monthly and 12-month rolling totals).
R. Records as required by 40 CFR Part 61, Subpart FF.
S. Records as required by 40 CFR Part 60, Subpart VV.
T. Average daily liquor flow rates of each urea granulator wet scrubber (daily when operated).
U. For the fuel(s) burned, the appropriate document(s) as described in Specific Condition No. 1, EUGs 3 and 4.

6. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations that qualify as Trivial Activities.

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

A. Hours of operation of each stationary reciprocating engine used for emergency power generation or for firewater pumping service.
B. Hours of operation and the production rates of the portable fertilizer mixing unit and engine.
C. Fuel dispensing to facility owned vehicles: annual throughput of gasoline and diesel.
D. Lime silos: inspection and maintenance of the dust collector.
E. Diesel storage tanks: records of tank capacities and tank contents.
F. UAN storage tanks: records of tank capacities and tank contents.
G. For other activities that have the potential emissions less than 5 TPY (actual): type of activity and the amount of emissions from the activity.

7. No later than 30 days after each anniversary of the original Title V operating permit (December 18, 2006), 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)]

8. Deviations from the 40 CFR Part 68 regulations that arise from review of process safety management procedures and programs, including deviations identified in the process safety management audits, will not be considered deviations of this permit.

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

A. Facility Wide

Citation	**Description**	**Reason for Non-Applicability**
OAC 252:100-4	New Source Performance Standards	prior to the effective date or below the specified size
OAC 252:100-7	Minor Sources	not in source category
OAC 252:100-11	Alternative Reduction Plans and Authorizations	not in source category
OAC 252:100-15	Mobile Sources	not in source category
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 252:100-31, Part 2	Sulfur Compounds, Ambient Concentrations	not in source category
OAC 252:100-35	Carbon Monoxide	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category
40 CFR 60 Subpart D	Steam Generators	below the specified size
40 CFR 60 Subpart Db, Dc	Steam Generating Units	prior to the effective date
40 CFR 60 Subpart G	Nitric Acid Plants	prior to the effective date
40 CFR 60 Subpart Kb	Volatile Organic Liquid Storage	prior to the effective date
40 CFR 61, all subparts except M and FF	NESHAP	not in source category, not a major source of HAPs
40 CFR 63	NESHAP	not in source category, not a major source of HAPs
40 CFR 64	Compliance Assurance Monitoring	address in Title V renewal application

B. By Emission Unit Grouping

EUG	Citation	Description	Reason for Non-Applicability
EUG 2	40 CFR 60, Subpart D	Steam Generating Units > 250 MMBTUH	below the specified size
EUG 2,3	40 CFR 60, Subpart Db	Steam Generating Units 100-250 MMBTUH	prior to the effective date
EUG 3	40 CFR 60, Subpart Dc	Steam Generating Units 10-100 MMBTUH	prior to the effective date
EUG 11	40 CFR 60, Subpart G	Nitric Acid Plants	prior to the effective date
EUG 5	40 CFR 60, Subpart Kb	Storage Vessels	prior to the effective date
EUG 2	OAC 252:100-31-25 (c)	Sulfur Compounds, Fuel and Emissions Monitoring	not in source category
EUG 4	OAC 252:100-33	Control of Emission of Nitrogen Oxides	below the specified size
EUG 5	OAC 252:100-37	Control of Emission of VOC	below the specified vapor pressure
EUG 6, 7, 12, 13, 14	OAC 252:100-19-4	PM Emissions from Fuel Burning Units	not in source category
EUG 5-15	OAC 252:100-31	Control of Emission of Sulfur Compounds	not in source category
EUG 5-15	OAC 252:100-33	Control of Emissions of Nitrogen Oxide	not in source category
EUG 6-15	OAC 252:100-37	Control of Emission of VOC	not in source category
EUG 2, 3, 4, 7, 10, 11, 12, 13, 15	OAC 252:100-8, Part 7	Prevention of Significant Deterioration	No changes have been made to trigger this requirements for these sources

10. Within 180 days following commencement of operations of each of the physically modified urea granulators, the permittee shall conduct performance testing as follows and furnish a written report to Air Quality. [OAC 252:100-43]

A. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality:

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 5: PM Emissions from Stationary Sources
Method 9: Visual Determination of Opacity
Method 202: Condensable PM Emissions from Stationary Sources

B. A copy of the test plan shall be provided to AQD at least 30 days prior to each test date.

C. Performance testing shall be conducted while the units are operating within 10% of the rates at which operating permit authorization will be sought.

D. At least 30 days prior to the testing, a notification of the test date and testing protocol shall be submitted to AQD. Deficiencies in the protocol shall be resolved prior to commencement of testing.

E. If any new or modified discharge point does not have a stack or forced air vent, testing may be limited to Method 9 testing of opacity.

F. Method 9 testing shall be conducted for a minimum of 30 six-minute averages on each point. If the point exhibits less than 10% opacity with no values of 20% or greater opacity, testing may be limited to 10 six-minute averages. Testing shall be conducted concurrently with Method 5 testing on each point.

11. At least once during the term of Permit No. 99-092-TV, the permittee shall conduct performance testing as follows and furnish a written report to Air Quality. [OAC 252:100-43]

A. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality:

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:	Carbon Monoxide Emissions from Stationary Sources

B. A copy of the test plan shall be provided to AQD at least 30 days prior to each test date.

C. Performance testing shall be conducted while the units are operating within 10% of the rates at which operating permit authorization will be sought.

D. At least 30 days prior to the testing, a notification of the test date and testing protocol shall be submitted to AQD. Deficiencies in the protocol shall be resolved prior to commencement of testing.

E. The following pollutants shall be tested for on each of the listed units:

Unit ID	Description	Pollutants Tested
101B1	Ammonia Plant No. 1 Reformer	NOx, CO
101B2	Ammonia Plant No. 2 Reformer	NOx, CO

12. No later than 180 days of start of operation of the modified urea plant, the permittee shall apply for a modified Title V operating permit and request that the specific conditions of this construction permit be incorporated into the Title V permit. [OAC 252:100-8-6]

PART 70 PERMIT

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

Permit No. 99-092-C (M-2)(PSD)

Koch Nitrogen Company,

having complied with the requirements of the law, is hereby granted permission to construct a urea plant expansion and associated auxiliary units at the Enid Nitrogen Plant located at 1619 South 78th, Enid, Garfield County, Oklahoma, subject to standard conditions dated January 24, 2008, 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.

Division Director, Air Quality Division **Date**

Koch Nitrogen Company
Attn: Mr. Cody Greenfield
1619 S. 78th Street
Enid, OK 73701

Re: Permit Application No. 99-092-C (M-2)(PSD)
Enid Nitrogen Plant
Enid, Garfield County, Oklahoma

Dear Mr. Greenfield:

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 on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

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

Sincerely,

David S. Schutz, P.E.
AIR QUALITY DIVISION
Enclosure

MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(January 24, 2008)

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, 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 document 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." However, an exceedance report that must be submitted within ten days of the exceedance under Section II (Reporting Of Deviations From Permit Terms) or Section XIV (Emergencies) may be submitted without a certification, if an appropriate certification is provided within ten days thereafter, together with any corrected or supplemental information required concerning the exceedance.

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1) and OAC 252:100-9-3.1(c)]

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]

I. 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)]

J. 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]

K. 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).

L. 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, 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. 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)(A), (C)(v), 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; and a statement that the facility will continue to comply with all applicable requirements.

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

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:

(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).

[OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

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(18) 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:

(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.

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

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:
   (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.

[OAC 252:100-25]

(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:

(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.

[40 CFR 82, Subpart A]

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:

(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.

[40 CFR 82, Subpart F]

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]