217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL
NSPS/NESHAP SOURCE

PERMITTEE

Archer Daniels Midland Company
Attn: Staci Bogue-Buchholz
4666 Faries Parkway
Decatur, Illinois 62526

Application No.: 06060071 I.D. No.: 115015AAE
Applicant's Designation: Glycols Plant
Subject: Glycols Plant
Date Received: June 29, 2006
Date Issued: **DRAFT**
Location: 4666 Faries Parkway, Decatur

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a glycols plant, as described in the above referenced application. This Permit is subject to the following special condition(s) and standard conditions attached hereto, except as superseded by a special condition.

In conjunction with this permit, approval is given with respect to the Prevention of Significant Deterioration of Air Quality Regulations (PSD) for the above referenced project, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is based upon and subject to the following findings and the conditions. This approval is also subject to the general requirement that the project be developed and operated consistent with the specifications and data included in the application and any significant departure from the terms expressed in the application, if not otherwise authorized by this permit, must receive prior written authorization from the Illinois EPA.

If you have any questions on this permit, please call Kevin Smith at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

EB:KLS:PSJ

cc: Region 3 and USEPA Region V

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INTRODUCTION: FINDINGS

1a. Archer Daniels Midland (ADM) has requested a permit to construct a glycols plant (the affected plant) at its Decatur manufacturing complex. The plant would produce USP (United States Pharmacopeia) grade glycerin and glycol products, including propylene glycol and ethylene glycol. The plant would be located in the building that housed ADM's former Vitamin C plant, reusing many of the process tanks and equipment used in production of Vitamin C.

b. The proposed plant would emit volatile organic material (VOM), as VOM is either removed from the glycerol or produced as a byproduct of the chemical processes by which the glycerol products are made. VOM emissions would be controlled by the general nature of the plant and by use of a scrubber system, condensers or flaring on the principal emissions units.

c. Certain support operations at the proposed plant would also have emissions, including a reformer which makes hydrogen from natural gas, a natural gas fired boiler, and a system for handling activated carbon.

2. The affected plant will also be accompanied by increases in emissions from certain existing facilities. In particular, the plant will utilize steam from existing coal-fired boilers, Boiler 1 through 9, in ADM's co-generation plant, which were constructed pursuant to Permits 85060030, 94020006 and 97050097. The plant would be accompanied by increased emissions from these boilers if this new steam demand cannot be met by reduced steam consumption elsewhere at ADM's Decatur complex. This permit does not authorize changes to the co-generation plant that would increase its capacity or allow emissions over the currently permitted levels, as set by Permits 85060030, 94020006 and 97050097.

3. The source is located in Decatur Township in Macon County. The area is designated attainment for all pollutants.

4. The project is subject to PSD review for particulate matter (PM), particulate matter less than 10 microns (PM10), volatile organic material (VOM), carbon monoxide (CO), nitrogen oxides (NOx), and sulfur dioxide (SO_2) because the potential emissions of these PSD pollutants from the project are significant, as described in Attachment 2.

5a. After reviewing the materials submitted by ADM, the Illinois EPA has determined that the project, as proposed, would be designed to (i) comply with applicable state and federal emission standards and (ii) utilize Best Available Control Technology (BACT) for emissions of the PSD pollutants from new and modified emission units that are subject to PSD. (Refer to the BACT determinations in Condition 1.4 and in Condition 2.x.3 of the Unit-Specific Conditions of the permit.)

b. The air quality analysis prepared for the project shows that the project would not threaten compliance with air quality standards. The air quality impacts from the project for PM, CO, NOx and SO_2 are not significant. In the case of ozone, the project would not contribute to an exceedance of the ozone air quality standard in Macon County, considering current air quality as monitored in the county.

6. The Illinois EPA has determined that the project, as proposed, would comply with all applicable Illinois Air Pollution Board Regulations and

the federal Prevention of Significant Deterioration of Air Quality Regulations (PSD), 40 CFR 52.21.

7. A copy of the application and a summary of the Illinois EPA’s review of the application and a draft of this permit were placed in a location in the vicinity of the project, and the public was given notice and an opportunity to examine this material and to submit comments and to request a public hearing on this matter.

Section 1: Conditions for the Project:

1.1. Effect of Permit

a. This permit does not relieve the Permittee of the responsibility to comply with all applicable local, state and federal requirements which are part of Illinois State implementation Plan, as well as all other applicable local, state and federal requirements.

1.2 Validity of Permit and Commencement of Construction

a. This permit shall expire if construction is not commenced within 18 months of the effectiveness of the permit, as provided by 40 CFR 52.21(r)(2).

1.3. Permitted Emissions of the Affected Plant

a. i. Annual emissions from the affected plant shall not exceed the following limits. These limits address all emissions from the affected plant, including emissions during startup, shutdown and malfunction. These limits do not address emissions from existing facilities, e.g., the Cogeneration plant, Carbon Furnaces and Wastewater Treatment Plant, due to increased utilization of these existing facilities.

Pollutant	PM	PM10	NOx	SO_2	CO	VOM
Limit (Tons/Yr)	6.58	4.45	39.8	0.53	24.7	84.3

ii. Compliance with these limitations and other annual limits in this permit shall be determined from a running total of 12 months of data, unless otherwise specified in a particular provision.

b. This permit is issued based on the existing source being a major source for Hazardous Air Pollutants (HAP), so that emissions of HAP from certain emission units in the affected plant are subject to the applicable National Emission Standards for Hazardous Air Pollutants (NESHAP, 40 CFR Part 63, as specifically addressed in Section 2 of this permit.

1.4. BACT Determination – General Requirements

The Permittee shall operate and maintain the emission units at the affected plant, including associated air pollution control equipment, in a manner consistent with good air pollution control practice to minimize emissions, including the following practices:

a. At all times, including periods of startup, shutdown, malfunction or breakdown, operate as practicable to minimize emissions.

b. Air pollution control equipment shall be operated in accordance with written operating procedures that address startup and shutdown, as well as normal operation, which procedures shall be developed and maintained by the Permittee and may incorporate the manufacturers recommended operating instructions.

c. Conduct visual inspections of emission units and associated air

pollution control as specified in Section 2.

d. Conduct regular preventative maintenance emission units and associated air pollution control devices.

e. Make prompt repairs to emission units and associated air pollution control devices upon identification of need either as a consequence of formal inspections or other observations.

f. Install, operate and maintain required monitoring devices and instrumentation in accordance with good monitoring practices, following the manufacturer's recommended operating and maintenance procedures or such other procedures as are otherwise needed to assure reliable operation of such devices.

g. Maintain records for the above inspection, maintenance, and repair activities.

1.5 Records for Required Operational Monitoring Systems and Instrumentation

a. The Permittee shall keep records of the data measured by required monitoring systems and instrumentation. Unless otherwise provided in a particular condition of this permit, the following requirements shall apply to such recordkeeping:

i. For required operational monitoring systems, data shall be automatically recorded by a central data system, dedicated data logging system, chart recorder or other data recording device. If an electronic data logging system is used, the recorded data shall be the hourly average value of the particular parameter for each hour. During periods when the automatic recording device is out of service, data shall be recorded manually at least once every 12 hours for periods when the associated emission unit(s) is in service.

ii. For required instrumentation, the measured data shall be recorded manually at least once per shift, with data and time both recorded, for periods when the associated emission unit(s) are in service, provided however that if data from an instrument is recorded automatically, the above provisions for recording of data from monitoring systems shall apply.

b. The Permittee shall maintain logs or other records for the operation and maintenance of operational monitoring systems and instrumentation required by this permit.

1.6. Retention and Availability of Records

a. The Permittee shall retain all records required by this permit at the source for at least five years, at a location where the records are readily accessible for inspection by the Illinois EPA.

b. The Permittee shall make all records required by this permit available for inspection at the source by the Illinois EPA, providing copies of records to the Illinois EPA upon request. For this purpose, the Permittee may keep records in a computerized data system provided that, upon request by the Illinois EPA during the sources normal working hours, requested information is retrieved

and available prior to inspection completion to the Illinois EPA.

1.7 Notifications

a. The Permittee shall notify the Illinois EPA within 30 days of the following events related to the affected plant:

i. Commencement of construction.

ii. Initial startup.

b. The Permittee shall notify the Illinois EPA within 30 days of any deviation from the annual emission limitations for the plant, as set in Condition 1.3. Any such notification shall include the information specified in Condition 3.4.

c. i. Two copies of the above notification and other reports and notifications required by this permit shall be sent to the Illinois EPA, Division of Air Pollution Control, Compliance Section, in Springfield, unless otherwise indicated.

ii. One copy of the above notification and other required reports and notifications required by this permit shall be sent to the Illinois EPA's Regional Office of the Division of Air Pollution Control, unless otherwise indicated.

1.8 Authorization to Operate Emission Units

a. The affected plant may be operated under this construction permit until final action is taken to incorporate these emission units in a revision to or renewal of it's CAAPP Permit. The Permittee shall demonstrate initial compliance with the short-term emission limitations and emission testing in accordance with the Condition 3.1 of this permit.

b. The Illinois EPA may extend this period upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing.

SECTION 2: UNIT SPECIFIC CONDITIONS

2.1 Emission Units and Processes in VOM Service

2.1.1 Description

At the affected plant, raw glycerol feedstock is first processed by distillation to remove impurities, such as water and methanol. The distilled glycerin is then further treated with activated carbon to remove trace impurities. The purified glycerin is then further processed at the plant into glycol products or can be sold as USP grade glycerin. Emissions of VOM from these operations, which are present from certain water-soluble impurities in the raw glycerol, will be controlled by a central water scrubber system.

The purified glycerin is made into glycol products by reacting the glycerin with hydrogen to split the glycerin molecule into the desired compounds, ethylene glycol and propylene glycol. Sorbitol, produced elsewhere at ADM's Decatur complex, may also be used as a feedstock in this reaction. The crude product from the reactors then undergoes a series of process steps to remove unreacted hydrogen, unreacted feedstock, entrained catalysts, small amounts of alcohols (byproducts of the reaction), and other undesired materials from the crude product. Most of the unreacted hydrogen is removed in the high-pressure flash step and is returned to the reactor systems. The remainder of the hydrogen, along with the VOM produced by the reaction, will be controlled by using it as fuel or combusted in a flare.

The prepared crude product is then processed in a series of distillation units to separate the different products and meet product specification. These operations are also controlled by the central scrubber system.

2.1.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Process Units (See Attachment 1-A for a detailed listing)	Raw Glycerol Processing	Various: Scrubber, Condenser, Conservation Vents
	Glycerol/Sorbitol Hydrogenolysis	Various: Flare or alternative
	Glycol Product Purification	Scrubber
Process Tanks and Storage Tanks (See Attachment 1-B for a detailed listing)	Tanks used in the storage, processing and manufacturing of glycol.	Various: Scrubber, Condenser, Conservation Vents

2.1.3-1 Applicability Provisions

a. An "affected unit" for the purpose of these unit specific conditions is a process unit, process tank or storage tank described in Conditions 2.1.1 and 2.1.2.

2.1.3-2 BACT Determination – Distillations Systems And Reactors

a. The VOM emissions from each affected distillation system for

which the Total Resource Effectiveness (TRE) value for control of VOM emissions is less than 10.0 shall be controlled with a scrubber or other control device that complies with one of the following limits:

i. At least 98 percent reduction of VOM by mass, (comparing the VOM in the inlet and outlet of the system), or

ii. A VOM emission concentration in the exhaust that is no more than 20 ppm.

b. The VOM emissions from the affected reactor systems shall be controlled as follows:

i. Emissions from low pressure flash vents shall be controlled by one of the following devices”:

A. A flare operated to comply with all relevant requirements of 40 CFR 60.18;

B. A control device that achieves either (1) At least 98 percent reduction of VOM by mass, (comparing the VOM in the inlet and outlet of the system), or (2) A VOM emission concentration of not more than 20 ppmv; or

C. Use as fuel in a natural gas fired fuel combustion device with a normal firing rate of at least 1.0 million Btu/hour.

ii. High pressure flash vents and other vents in the reactor area shall either be operated so as to maintain a Total Resource Effectiveness (TRE) value for control of VOM emissions, as determined in accordance with 40 CFR 60, Subpart RRR, that is equal to or greater than 10.0 or the vent shall be controlled in accordance with Conditions 2.13-2(b)(i).

2.1.3-3 BACT Determination – Process Tanks and Storage Tanks

a. Affected process and storage tanks in elevated vapor pressure service (i.e., Tanks TK005S, TK006S, TK007S, TK008S, TK009S, TK011S, TK012S, TK013S, TK023S, TK024S, TK025S, TK034S, TK035S, RX023S, and RX026S, based on design data for the plant) shall be vented to a scrubber or other control device that complies with one of the following limits, except as provided by Condition 2.1.3-3(b). For this purpose, “elevated vapor pressure service” means storage or handling of a volatile organic liquid (VOL) with a true partial pressure of 0.25 psia or more at the temperature at which the VOL is handled.

i. At least 98 percent reduction of VOM by mass, (comparing the VOM in the inlet and outlet of the system), or

ii. A VOM emission concentration in the exhaust that is no

more than 20 ppm.

b. As an alternative to control in accordance with Condition 2.1.3-3(a), affected storage tanks TK010N, TK034N and TK035N (which are existing tanks that are not located in the area of the plant that is safety rated for handling of solvent shall each be operated and maintained as follows:

i. The tank shall be equipped with an internal floating roof, that is designed and maintained in accordance with relevant requirements of 40 CFR 60 Subpart Kb; or

ii. If the tank operates at a temperature so that the true partial vapor pressure of the stored VOL is 1.0 psia or more (i.e., TK034N, based on design data for the plant), the tank shall be operated with a vent-reflux condenser that reduces the exhaust from the tank to a temperature at which the true partial vapor pressure of the VOL would be no more than 0.1 psia or achieves at least 98 percent control for VOM; or

iii. If the tank operates at a temperature so that the true partial vapor pressure of the stored VOL is less than 1.0 psia and the annual VOM emissions of the tank are less than 2.0 tons/year (i.e., TK010N and TK035N, based on design data for the plant), the tank shall be controlled with a conservation vent.

c. Each affected process and storage tank that is not in elevated vapor pressure service shall either be controlled with a conservation vent or vented to a control device that meets the requirements of Condition 2.1.3-3(a).

2.1.3-4 BACT Determination – Compliance Provisions

a. For the affected units, all BACT limits and associated operating parameter ranges and limits apply at all times when the affected unit is operating, except, in the case of process equipment or control systems, during previously planned startup and shutdown periods (including planned maintenance periods), and malfunctions as defined in 40 CFR Part 63. These startup and shutdown periods shall not exceed the minimum amount of time necessary for these events, and during these events, the Permittee shall minimize emissions to the extent practicable. To the extent practicable, startup and shutdown of control systems shall be performed during times when process equipment is also shut down.

2.1.3-5 Applicable Federal Emissions Standards

a. Affected distillation systems that have vents that meet the definition of process vent in 40 CFR 63.107 are subject to the NESHAP for Hazardous Organic Chemical Manufacturing, 40 CFR 63, Subparts F, G and H. Each unit shall comply with applicable emission standards and requirements of the NESHAP, 40 CFR 63, Subparts F, G and H and Subpart A, General Provisions, including the following requirements of the

NESHAP:

i. Pursuant to the NESHAP, the emissions of organic HAP from each unit shall be controlled by at least 98 percent or to no more than 20 ppmv, or a TRE value for organic HAP of greater than 4.0 shall be maintained for the vent. [40 CFR 63.113]

ii. At all times, including periods of startup, shutdown, and malfunction, each affected unit, including associated air pollution control equipment and monitoring equipment, shall be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 CFR 63.6(e)(1)(i)]

2.1.3-6 Applicable State Emissions Standards

a. The organic material emission from the affected process units and process tanks are subject to 35 IAC 215.301 and 215.302, which provide that no person shall cause or allow the discharge of more than 8 lb/hr of organic material into the atmosphere from any emission source, except if no odor nuisance exists the limitation of this part shall apply only to photochemically reactive material, as defined by 35 IAC 211.4690, and emissions of organic material in excess of 8 lb/hr are allowable if such emissions are controlled so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water, as provided by 35 IAC 215.302.

2.1.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the raw glycerol purification operations not being subject to the NESHAP, 40 CFR part F, G and H, because these operations only purify glycerin, rather than producing glycerin.

b. This permit is issued based on affected storage tanks not being subject to the control requirements of 40 CFR 60, Subpart Kb because the affected storage tanks do not meet the criteria for applicability of this NSPS.

Note: If an affected storage tank were to meet the applicability criteria of 40 CFR 60, Subpart Kb, the relevant requirements of this NSPS would apply.

c. This permit is issued based on affected storage tanks not being subject to the control requirements of 35 IAC Part 211, Subpart C because the affected storage tanks do not meet the criteria for applicability of this NSPS.

2.1.5 Operational and Production Limits and Work Practices

a. The scrubbing system shall be operated with scrubbant flow rate maintained at levels established based on emission

testing that demonstrates compliance with the applicable permit limits.

2.1.6 Emission Limitations

Emissions from the affected units shall not exceed the following limits:

Process	VOM (tons)		
	Lb/Hr	Ton/mo	Ton/yr
High & Low Pressure Flash Vents	0.25	-	1.1
Distillation Systems (controlled)	0.71	-	3.12
Controlled Units (scrubber)	-		
Distillation Systems - uncontrolled	-	0.3	1.8
Other Process Units	-	0.60	6.00
Tanks	-	0.78	7.82
Total	-	-	13.82

2.1.7 Testing Requirements

a. The Permittee shall have emissions testing conducted for each scrubber on the affected units in accordance with the applicable requirements of Condition 3.1.

2.1.8 Monitoring and Instrumentation Requirements

a. For each scrubber controlling one or more affected units, the Permittee shall install, maintain and operate continuous monitors for the following operating parameters:

i. Scrubbant flow rate (gallons/minute).

b. For each condenser controlling an affected unit, the Permittee shall install, maintain and operate continuous monitors for the following operating parameter:

i. Exhaust gas temperature from the condenser.

2.1.9 Recordkeeping Requirements

a. The Permittee shall maintain a file for the affected units which contains the following information:

i. The properties of the various VOLs handled in the affected units, including density, molecular weight, and vapor pressure across the range of temperature at which the unit can operate.

ii. For each affected unit whose emissions are not controlled, information explaining why the unit is not required to be controlled, e.g., the TRE value of the vent or the vapor pressure of the stored VOL, with supporting documentation.

iii. For each affected storage tank that is complying with Condition 2.1.3-3(b), information explaining why the tank qualifies for the alternative requirements in this

condition.

b. The Permittee shall maintain records for the amount of operation of each affected unit or group of affected units (amount of material processed or hours of operation).

c. The Permittee shall maintain the following logs for each affected unit:

   i. An operating log, in accordance with Condition 3.3(a).

   ii. An inspection, maintenance and repair log, in accordance with Condition 3.3(b).

d. i. For affected units that are controlled by control devices, the Permittee shall maintain the records related to scheduled outages of each group of affected units and maintenance activities for the control device to demonstrate that the requirements of Condition 2.1.3-4 are being met, including the following:

      A. A schedule of planned outages for each group of affected units, including the reason for each outage and expected duration.

      B. A schedule of planned maintenance periods for each control system, with the activities that are expected to be performed and if associated units would continue to operate during such a period, a detailed explanation why maintenance cannot be performed during a scheduled outage of the associated affected units.

      C. A record of actual maintenance activities that are accomplished, with detailed explanation if the activities are either less than or more than planned.

   ii. For this purpose, the schedule may either directly address the timing of the activities or indirectly address the timing of activities, e.g., the occurrence of activities as related to inspections or operating parameters of affected units, provided that equipment is maintained and operated such that shutdowns and subsequent startup, are either planned or result from malfunctions as defined by 40 CFR 63, but are not the result of upsets in equipment operation that result from poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown.

e. For affected units controlled by a control device, the Permittee shall maintain records for each period during which a group of affected units was in operation when the associated control device was not in operation or was not operating properly, including the following.

   i. Each period of time when the scrubber system was not operating or an operating parameter of the scrubber system deviated outside the required level or range, with date, time, duration, description of the incident.

ii. Whether emissions exceeded applicable emission limits, with explanation.

iii. The causes or likely causes of the incident, including whether it occurred during a scheduled startup or shutdown of affected units or a scheduled maintenance period of the associated control system, with explanation.

iv. A description and explanation of the corrective actions that were taken, any repairs that were made, and any measures that were taken to prevent reoccurrence of similar incidents.

v. If the Permittee considers that all or a portion of the incident was a malfunction, as defined by 40 CFR 63, a further explanation why all or a portion of the incident should be considered a malfunction.

f. The Permittee shall maintain the following records for the VOM emissions of the affected units:

i. A file containing the emission factor(s) and maximum hourly emission rates used by the Permittee to determine VOM emissions from each affected unit or group of affected units (other than uncontrolled storage tanks), with supporting documentation.

ii. Records for any hour in which the emissions of an affected unit or group of affected units (other than uncontrolled storage tanks) exceeded an applicable limit, with explanation.

iii. Records of the emissions (tons/month and tons/year) of each affected unit or group of affected unit (other than uncontrolled storage tanks) based on operating data for the units and appropriate emission factors, with supporting calculations.

iv. Records of the emissions (tons/month and ton/year) from the affected storage tanks that are not controlled.

2.1.10 Reporting Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS and NESHAP.

b. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by and be submitted in accordance with Condition 3.4.

i. If an affected process unit or group of units whose emissions are to be controlled operates for more that 8 hours without control of emissions, the Permittee shall immediately notify the Illinois EPA.

ii. If an affected tank is damaged so there is a deviation

from an applicable equipment requirement for the tank that is not repaired or otherwise corrected within 7 days, the Permittee shall notify the Illinois EPA in 30 days.

iii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.2 Components in VOM Service

2.2.1 Description

Equipment subject to the leak detection and repair, LDAR, are components such as valves, flanges, etc., in the piping system at the affected plant.

2.2.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Components	Each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system.	----

2.2.3-1 Applicability Provisions and Applicable Regulations

a. The “affected components” are the components (valves, flanges, pumps, seals, etc.), described in Condition 2.2.1 and 2.2.2 that handle VOL are in VOM service defined as components containing 10 percent or more by weight volatile organic material

2.2.3-2 BACT Determination

a. Emissions from leaks by components in VOM service as defined by 40 CFR 60 Subpart VV in the affected plant shall be controlled by a Leak Detection and Repair (LDAR) Program that meets the requirements of the Consolidated Air Rule, 40 CFR 65, Subpart F.

Note: Equipment meeting the following conditions are not subject to Section 2.2.

i. Equipment in vacuum service is excluded form the requirements of this Section.

ii. Lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities and other nonprocess lines, such as heating and cooling systems that do not combine their materials with those in the processes they serve, are not considered to be part of a process unit.

2.2.3-3 Applicable Emission Standards

a. Certain affected components are subject to the NSPS, 40 CFR Part 60, Subpart VV, pursuant to which the Permittee must implement an LDAR Program.

Note: This permit does not address the requirements of 35 IAC Part 215, Subpart Q, Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment, because the BACT, NSPS and NESHAP require implementation of a LDAR Program with greater overall effectiveness. Compliance with

this permit shall also be deemed compliance with IAC Part 215, subpart Q.

This permit also does not address the requirements of 35 IAC 215.122, as the affected plant is not expected to be subject to those requirement pursuant to 35 IAC 215.122(c), as the affected plant will not handle VOL with a vapor pressure of 2.5 psia or greater at 70•F or be the cause of an odor nuisance.

2.2.4 Nonapplicability of Regulations of Concern

a. This permit is issued based on the affected components not being subject to the control requirements of 35 IAC 215.142 because components do not handle VOL with a vapor pressure of 2.5 psia or greater at 70 ˚F.

2.2.5 Operational and Production Limits and Work Practices

a. Operational Limitations for LDAR

i. For affected components, that are subject to 40 CFR 60, Subpart VV, the Permittee shall follow the work practice requirements set forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to comply with the alternative standards of 40 CFR 60.483-1, 60.483-2, or 40 CFR 65, subpart F if applicable.

2.2.6 Emission Limitations

a. Emissions of VOM from the affected components in VOM service shall not exceed 66.4 tons/year. Compliance with these limitations shall be determined using standard USEPA methodology for determining VOM emissions from leaking components.

Note: This limit is based on a preliminary estimate of the number and type of components and may be revised by the permittee upon startup based on a final count of components.

b. This permit is issued based on minimal emissions of VOM from affected components that are not in VOM service.

2.2.7 Testing Requirements

None

2.2.8 Monitoring and Instrumentation Requirements

a. For all affected components that are in VOC service, as defined by 40 CFR 60.481, other than components in vacuum service, the Permittee shall follow the inspection requirements set forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to comply with the alternative standards of 40 CFR 60.483-1 through 60.483-2, as applicable. The Permittee may also elect to comply with 40 CFR 65, Subpart F.

2.2.9 Recordkeeping Requirements

a. The Permittee shall maintain the following records related to affected components:

i. The applicable records as specified in 40 CFR 60.486.

ii. A leaking components monitoring log, which shall contain the following information:

A. The name of the process unit where the component is located;

B. The type of component (e.g., valve, pump seal);

C. The identification number of the component;

D. The date on which a leaking component is discovered;

E. The date on which a leaking component is repaired;

F. The date and instrument reading of the recheck procedure after a leaking component is repaired;

G. A record of the calibration of the monitoring instrument;

H. The identification number of leaking components which cannot be repaired until process unit shutdown; and

I. The total number of components inspected and the total number of components found leaking during that monitoring period.

iii. All required reports as specified at 40 CFR 60.487.

b. The Permittee shall maintain records of the VOM emissions from affected components (tons/month and tons/year) compiled on at least an annual basis, with supporting documentation and calculations.

2.2.10 Reporting Requirements

a. The Permittee shall fulfill all applicable notification and reporting requirements of the NSPS for the affected components in VOM service.

b. The Permittee shall report any deviations from the requirements of this permit for the affected components in the quarterly compliance report in accordance with Condition 3.4.

2.3 Loadout Operations

2.3.1 Description

In the loadout operations, finished products and alcohol byproduct are transferred to tank trucks and railcars to be sent to customers.

2.3.2 List of Emission Units and Pollution Control Equipment

Area	Description	Emission Control Equipment
Truck and Rail Loadout Operations	Loadout of Glycol Products	None
	Loadout of Alcohol Byproducts	Submerged Loading

2.3.3-1 Applicability Provisions

a. An “affected unit” for the purpose of these unit specific conditions is a loadout operation described in Conditions 2.3.1 and 2.3.2.

2.3.3-2 BACT Determination

a. The loadout of VOL with a VOM vapor pressure, at the temperature of the material as loaded, that is equal to or greater than 0.1 psia, e.g., alcohol byproducts, from the affected plant shall be conducted with submerged loading.

2.3.4 Non-Applicability of Regulations of Concern

None

2.3.5 Operational and Production Limits and Work Practices

a. VOL with a vapor pressure greater than 2.5 psia, at 70˚F, shall not be loaded out from the affected plant.

Note: This permit does not address the requirements of 35 IAC 215.122 for loadout operations because the affected plant is not expected to be subject to those requirement pursuant to 35 IAC 215.122(c), as the affected plant will not handle VOL with a vapor pressure of 2.5 psia or greater at 70 ˚F and should not cause of an odor nuisance.

2.3.6 Emission Limitations

a. Emissions of VOM from the affected units shall not exceed 0.10 tons/month and 0.65 tons/year. Compliance with this limit shall be determined using standard the following formula (AP42 equation 5.2-1; 1/95 Edition; submerged filling):

$$L_L = 12.46(SPM/T)$$

L_L = Loading Losses
S = saturation factor = 0.6 (Table 5.2-1)
P = true vapor pressure (psia)
M = molecular weight (lb/lb-mole)

T = Temperature (Rankine)

2.3.7 Testing Requirements

None

2.3.8 Operational Monitoring and Instrumentation Requirements

None

2.3.9 Recordkeeping Requirements

a. The Permittee shall maintain a file containing the following information:

   i. Identification of the various types of VOL loaded out from the affected plant, with maximum temperature of the material loaded out, vapor pressure and molecular weight, with supporting documentation.

   ii. A description of the practices used for load out of different types of VOL from the affected plant.

b. The Permittee shall maintain records of the amounts of different VOL loaded out from the affected plant (monthly and annually).

c. The Permittee shall maintain records that identify any loadout of VOL for which the normal practices for loadout were not followed, with a description and an estimate of the additional emissions of VOM that accompanied such activity.

d. The Permittee shall maintain records of the emissions of VOM from the affected units (tons/month and tons/year), with supporting calculations.

2.3.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA of any deviations from the requirements of this permit for the affected units with the quarterly compliance report, in accordance with Condition 3.4.

2.4 Gas-Fired Combustion Equipment – Reformer and Boiler

2.4.1 Description

The affected plant will have a reformer to produce the hydrogen gas needed by the plant. In a reformer, hydrogen is made from the reaction of natural gas and steam in the presence of a catalyst at high temperature. The carbon dioxide and CO in the raw hydrogen gas stream from the reformer are then separated from the hydrogen gas using molecular sieves. These sieves are periodically regenerated, with the waste gas stream sent back as fuel in the combustion chamber of the reformer.

The plant will also have a natural gas fired boiler to supply steam for certain process operations in the affected plant.

2.4.2 List of Emission Units and Pollution Control Equipment

Unit	Description	Emission Control Equipment
Reformer	Production of hydrogen Natural gas fired, 80 million Btu/hr	Low-NOx Burners
Boiler	Natural Gas-Fired Boilers, three units with nominal 20 million Btu/hr each	Low-NOx Burners Good Combustion Control

2.4.3-1 Applicability Provisions and Applicable Regulations

a. The “affected units” for the purpose of these unit specific conditions are the reformer and boiler identified in Conditions 2.4.1 and 2.4.2.

2.4.3-2 BACT Determination

a. i. The affected reformer shall be operated and maintained with low NOx natural gas burners.

ii. The emissions of the affected reformer comply with the following limits:

Pollutant	Limit	
	Lbs/million Btu	Lbs/Hour
NOx	0.04	--
PM		0.40*
CO	--	0.80*
VOM	--	0.40*

* This limit is based on the design heat input capacity of the affected reformer (80 million Btu/hr) and design emission rates, i.e., 0.005, 0.010 and 0.005 lb/million Btu for PM, CO, and VOM, respectively.

b. i. The affected boiler shall be operated and maintained with low NOx burners, for control of NOx, and good combustion practices, for control of CO, VOM and PM.

ii. The emissions from each of the affected boilers shall comply with the following limits:

Pollutant	Limit	
	Lbs/million Btu	Lbs/hour
NOx	0.04	--
PM	--	0.10*
CO	--	1.44*
VOM	--	0.10*

* This limit is based on the design heat input capacity of each affected boiler (20 million Btu/hr) and design emission rates, i.e., 0.005, 0.072 and 0.005 lb/million Btu for PM, CO and VOM, respectively.

2.4.3-3 Applicable Federal and State Emission Standards

a. The affected units are subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc. The affected units and the Permittee shall comply with all applicable requirements of the NSPS, 40 CFR 60, Subpart Dc and Subpart A, General Provisions, including the following:

i. The emissions of particulate matter from each affected unit, as would be measured by USEPA Reference Method 5 or 5C, shall not exceed 0.030 lb/MMBtu, except during periods of startup, shutdown, and malfunction. [40 CFR 60.43c(d) and (e)]

ii. The opacity of the exhaust from each affected unit shall not exceed 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity and during periods of startup, shutdown, and malfunction. [40 CFR 60.43c(c) and (d)]

iii. At all times, including periods of startup, shutdown, and malfunction, each affected unit, including associated air pollution control equipment, shall be operated and maintained in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 60.11(d)]

b. The affected units are subject to the NESHAP for Industrial, Commercial and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD. Each unit shall comply with applicable emission standards and requirements of the NESHAP, 40 CFR 63, Subpart DDDDDD and Subpart A, General Provisions, including the following requirements of the NESHAP:

i. Pursuant to the NESHAP, the emissions of CO from each unit shall not exceed 400 ppm, on a three-run basis, as applicable for a unit with a rated heat input that is less than 100 million Btu per hour, except during periods of startup, shutdown, and malfunction. [40 CFR 63.6(f)(1) and 63.7500(a)]

ii. At all times, including periods of startup, shutdown,

and malfunction, each affected unit, including associated air pollution control equipment and monitoring equipment, shall be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 CFR 63.6(e)(1)(i)]

iii. For each affected unit, the Permittee shall comply with applicable planning, work practice, emission testing, monitoring, recordkeeping and reporting requirements of the NESHAP.

d. The affected combustion units are subject to the general state emission standards for opacity (35 IAC 212.123) and SO_2 (35 IAC 214.301) and CO (35 IAC 216.121),

2.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected units not being subject to monitoring requirements for opacity or emission testing requirements for PM under the NSPS, as provided by 40 CFR 60.45c(c) and 60.47c(c), because the units only burn gaseous fuel and the potential SO_2 emission rate of the fuel is less than 0.54 lb/million Btu.

b. This permit is issued based on the state standard for opacity at 35 IAC 212.123 being superseded by more stringent standard pursuant to the NSPS.

2.4.5 Operational and Production Limits and Work Practices

a. Natural gas and other gaseous fuels shall be the only fuels fired in the affected units.

b. At all times, the Permittee shall maintain and operate the affected units, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

2.4.6 Emission Limitations

a. The emissions of the affected units shall not exceed the following limits:

Pollutant	Reformer		Each Boiler	
	Lb/hr	Ton/yr	Lb/Hr	Ton/yr
NOx	3.20	14.0	0.80	3.50
CO	0.80	3.50	1.44	6.31
PM	0.40	1.75	0.10	0.44
VOM	0.40	1.75	0.10	0.44
SO_2	--	0.21	--	0.05

2.4.7 Testing Requirements

a. The Permittee shall have emissions testing conducted for each affected unit in accordance with the applicable requirements of Condition 3.1 and the NESHAP (for CO

emissions).

2.4.8 Monitoring Requirements

None

2.4.9 Recordkeeping Requirements

a. The Permittee shall comply with all applicable recordkeeping requirements of the NSPS and NESHAP, including keeping:

i. Documentation for the sulfur content, in lbs sulfur per million Btu, of the fuels burned in each affected unit. [40 CFR 60.48c(f))

ii. Records of the amount of each fuel burned during each calendar month (or during each day if the potential SO_2 emissions rate is 0.32 lb/million Btu or greater. [40 CFR 60.48c(g)]

b. The Permittee shall keep records of the operation of the affected reformer (natural gas feed or hours of operation).

c. The Permittee shall maintain the following logs for each affected unit:

i. An operating log, in accordance with Condition 3.3(a).

ii. An inspection, maintenance and repair log, in accordance with Condition 3.3(b).

d. The Permittee shall maintain the following records related to emissions of the affected units:

i. A file containing the emission factor(s) and maximum hourly emission rates used by the Permittee to determine NOx, CO, PM, SO_2, VOM and HAP emissions of each affected units, with supporting documentation.

ii. Records for any hour in which emissions exceeded the applicable limit.

iii. Records of the NO_x, CO, PM, SO_2, VOM, emissions of each affected unit (tons/month and tons/year), based on operating data for the units and appropriate emission factors, with supporting calculations, which records shall be compiled on at least a quarterly basis.

2.4.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA of any deviations from the requirements of this permit for an affected unit as follows. These reports shall include the information specified in Condition 3.4.

i. Excess opacity that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

ii. All other deviations shall be reported in the quarterly compliance report, in accordance with Condition 3.4.

2.5 Particulate Matter (PM) Process Emission Units

2.5.1 Description

Bulk activated carbon is delivered to the affected plant from the supplier or from the existing activated carbon handling facility at the complex and transferred to the bleaching columns. The emissions of PM that could occur from handling this potentially dusty material are controlled by enclosure and venting of exhaust streams to a fabric filter or baghouse.

The affected plant also has a central vacuum cleaner or “house dust collection system” that is for general housekeeping. The exhaust from the system is also vented through a baghouse.

2.5.2 List of Emission Units and Pollution Control Equipment

Operation	Description	Emission Control Equipment
Carbon Transfer System	Pneumatic carbon transfer system	Enclosure and filter
House Dust Collection System	Central vacuum cleaning system	Filter

2.5.3-1 Applicability Provision

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.5.1 and 2.5.2.

2.5.3-2 BACT Determination

a. There shall be no visible emissions of fugitive particulate matter, (PM not collected from a capture system and released to the atmosphere at the point of generation)as defined by 40 CFR 60.671, from the affected plant.

b. PM emissions from the affected carbon transfer system shall be controlled by:

   i. Enclosure of the system so as to prevent visible fugitive emissions from the system.

   ii. Venting of collected emissions through a filter control device from which PM emissions, as would be measured by USEPA Method 5, do not exceed 0.005 gr/dscf.

c. The affected house dust collection system shall be vented through a filter control device from which PM emissions, as would be measured by USEPA Method 5, do not exceed 0.005 gr/dscf.

2.5.3-3 Applicable Emission Standards Regulations

a. The affected units are subject to the general state emission standards for opacity (35 IAC 212.123) and PM (35 IAC 212.321).

2.5.4 Nonapplicability of Regulations of Concern

None

2.5.5 Operational and Production Limits and Work Practices

a. The Permittee shall operate each baghouse for the affected units with a pressure drop that is within a range that is consistent with manufacturer's recommended levels or that during emission testing that demonstrated compliance with applicable requirements.

2.5.6 Emission Limitations

a. Emissions of PM from the affected units shall not exceed the following limits:

Unit	Limit	
	Lb/Hr	Tons/Year
House Dust Collector	0.023	0.10
Carbon Transfer System	0.023	0.10
Total	-	0.20

2.5.7 Testing Requirements

a. Upon request by the Illinois EPA, the Permittee shall promptly have emission testing conducted for an affected unit in accordance with the methods and procedures specified in Condition 3.1.

b. Upon request by the Illinois EPA, the Permittee shall promptly perform opacity observation for an affected unit in accordance with the methods and procedures specified by Condition 3.2.

2.5.8 Operational Monitoring Requirements

a. For the baghouse for affected carbon transfer system, the Permittee shall install, operate and maintain instrumentation to measure the pressure drop across the baghouse and record pressure drop at least once per operating week.

2.5.9 Recordkeeping Requirements

a. The Permittee shall maintain a file containing the following information for the filters for the affected units:

i. A copy of the manufacturer's specifications for the exhaust dust loading from the filter and the manufacturer's recommended operating and maintenance procedures for the filter.

ii. The range of pressure drop within which the filter for the affected carbon transfer system will be operated, as required by Condition 2.5.5(a), if not the range recommended by the manufacturer, with explanation and supporting documentation.

d.. The Permittee shall maintain records of the operating schedule of each affected unit, which record shall be kept current.

e. The Permittee shall maintain the following log(s) or other records for the affected units:

i. Operating log(s) in accordance with Condition 3.3(a.

ii. Inspection, maintenance and repair log(s) in accordance with Condition 3.3(b), which also specifically identify performance of the inspections required by Condition 2.5.5(a).

f. The Permittee shall maintain the following records related to the emissions of each affected units:

i. Documentation for the PM emission factor(s) and maximum hourly emission rates used by the Permittee to determine emissions of the unit.

ii. Records for any hour in which emissions exceeded an applicable limit.

ii. The PM emissions of the unit (tons/month and tons/year) based on appropriate emission factors and operating data, with supporting calculations.

2.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by and be submitted in accordance with Condition 3.4.

a. Excess opacity from the affected PM process units that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

b. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report in accordance with Condition 3.4.

2.6 Cooling Tower

2.6.1 Description

Two new cells are being constructed on an existing non-contact cooling tower which is used to support the heat exchangers used to cool process streams and to condense surplus steam being returned to boiler.

2.6.2 List of Emission Units and Pollution Control Measures

Emission Unit Description	Control Measures
Cooling Tower #5, Cells 10 & 11	Drift Eliminator

2.6.3-1 Applicability Provision

a. The “affected cooling tower” for the purpose of these unit specific conditions is the cooling tower identified in Conditions 2.6.1 and 2.6.2.

2.6.3-2 BACT Determination

a. The affected cooling tower cells shall be equipped with drift eliminators that are designed to reduce drift loss to no more than 0.005 weight percent of the circulating water flow.

b. The total dissolved solids (TDS) content of the water circulated in the cooling tower shall not exceed 2500 ppm, annual average.

c. Process water or wastewater from the glycols plant shall not be introduced into the cooling water, other than through unintentional leaks, which shall promptly be repaired.

2.6.3-3 Applicable Emissions Standards and Control Requirements

a. Chromium-based water treatment chemicals, as defined in 40 CFR 63.401, shall not be used in the affected cooling tower.

b. The affected cooling tower is subject to the HON NESHAP. Pursuant to 40 CFR 63.104(a), the cooling water system shall be operated such that the pressure of cooled water sent to process units is at least 35 kilopascals greater than the maximum pressure on the process side or the permittee documents that the recirculating heat exchanger system is used to cool process fluids that contain less than 5 percent by weight of total hazardous air pollutants listed in table 4 of Subpart F.

c. The affected cooling tower is subject to general state rules for opacity (35 IAC 212.123) and PM (35 IAC 212.321).

2.6.4 Non-Applicability of Regulations of Concern

None

2.6.5 Operational Requirements

None

2.6.6 Emission Limitations

a. Emissions of PM from the affected cooling tower cells shall not exceed 1.10 tons/year. Compliance with this limit shall be calculated using a material balance based on design data for the drift eliminator and actual data for other operating parameters of the cooling tower.

2.6.7 Testing Requirements

None

2.6.8 Sampling and Analysis Requirements

a. The Permittee shall sample and analyze the water circulated in the affected cooling tower on at least a quarterly basis for the TDS concentration, taking either grab samples or a daily composite sample of the water.

b. The Permittee shall keep records for this sampling and analysis activity, including documentation for sampling and analysis as well the resulting data that is collected.

2.6.9 Recordkeeping Requirements

a. The Permittee shall maintain a file containing the following information for the affected cooling tower:

i. The manufacturer’s specifications or design data for the cooling tower, including water circulation rate (gallons/hour) and design loss rate of the drift eliminators (percent), with supporting documentation.

ii. The maximum PM emissions from the cooling tower (tons/year), based on maximum operating rate of the cooling tower and factors that with greatest loss of PM as emissions, with supporting calculations.

b. The Permittee shall maintain the following records for the actions that it uses to routinely verify the solids contents of the water circulating in the cooling tower, such as periodic grab sampling and analysis, conductivity measurements, etc., including:

i. A written description of the procedures, with explanation of how they act to address compliance.

ii. Records for implementation of the procedure, including measured value(s) of relevant parameter(s).

c. The Permittee shall maintain the following operating records for the affected cooling tower:

i. Total dissolved solids concentration of the water circulated in the cooling tower, recorded on at least a quarterly basis (ppm).

ii. The amount of water circulated in the affected cooling tower, gallons/month, with supporting calculations.

d. The Permittee shall maintain the following logs or other records for the cooling tower:

i. Operating log(s), in accordance with Condition 3.3(a).

ii. Inspection, maintenance and repair log(s) in accordance with Condition 3.3(b).

e. The Permittee shall maintain records for the PM emissions from the cooling tower (ton/month and ton/year), with supporting documentation and calculations.

2.6.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the cooling tower as follows. These notifications shall include the information specified by Condition 3.4.

i. If the cooling tower is damaged so there is a deviation from applicable requirements for the drift eliminators that is not repaired or otherwise corrected within 10 days, the Permittee shall notify the Illinois EPA within 30 days.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the cooling tower as follows:

2.7 Roadways (Fugitive Dust)

2.7.1 Description

Fugitive dust/particulate matter emissions will be generated by vehicle traffic on the existing roadways at the complex that will handle vehicle traffic to and from the affected plant, which currently handle vehicle traffic for existing BioProduct facilities at the complex. Fugitive particulate matter emissions will also potentially occur from vehicle traffic and wind erosion in a new area developed next to the plant at which unloading and loading of materials will take place.

2.7.2 List of Emission Units and Pollution Control Equipment

Unit	Description	Emission Control
Roadways	Vehicle traffic on existing roadways associated with the affected plant	Fugitive Dust Control Program
Unloading/ Loading Area	Vehicle traffic and wind erosion on the new unloading/loading area at the affected plant	Partial Enclosure and Good Management Practices

2.7.3-1 Applicability Provisions

a. The affected units for the purpose of these unit-specific conditions are the roadways and unloading area described in Conditions 2.7.1 and 2.7.2.

2.7.3-2 BACT Determination

a. The opacity of fugitive particulate emissions from the new unloading/loading area associated with the affected plant, except during periods of high wind speeds, shall not exceed 10 percent opacity. For this purpose, opacity and the presence of high wind speeds shall be determined in accordance with 35 IAC 212.109 and 35 IAC 212.314, respectively.

b. Good management practices shall be implemented for the new unloading/loading area to minimize and significantly reduce fugitive dust from the area. After construction of the affected plant is complete, these practices shall provide for pavement, collection of any spilled material to minimize carryout of such material, and regular treatment (flushing, sweeping, or vacuuming) to control fugitive dust.

2.7.3-3 Applicable Regulations

a. The affected units are subject to applicable emission standards and requirements in 35 IAC Part 212, Subpart K, including 35 IAC 212.306.

b. The Permittee shall implement an operating program designed to significantly reduce fugitive particulate matter emissions from the affected units, in accordance with 35 IAC 212.309, 212.310 and 212.312. For this purpose, the affected roadways

shall continue to be addressed by the operating program for the BioProducts Plant, which addresses all vehicle traffic on these roadways. The affected unloading/loading area shall be addressed by separate program specifically developed by the Permittee to address this area. (See also Condition 2.7.5(a).)

2.7.4 Non-Applicability of Regulations of Concern

a. The affected units are not subject to the requirements of 35 IAC 212.321 ("the process weight rate" rule) because of the disperse nature of these units. [35 IAC 212.323]

2.7.5 Operational and Production Limits and Work Practices

a. The Permittee shall carry out control measures for fugitive dust for the unloading/loading area in accordance with a written control program maintained by the Permittee, which shall set forth the measures being implemented to demonstrate compliance with Conditions 2.7.3-2 This program shall include: (1) a description of the emissions control technique(s) (e.g., vacuuming or sweeping), that will routinely be implemented; (2) triggers for implementation of additional control, e.g., observation of extended dust plumes following passage of vehicles; and (3) the estimated effectiveness of the various control techniques in reducing PM emissions, with supporting documentation.

b. The Permittee shall conduct inspections of the new unloading/loading area on a monthly basis with personnel that not implement the control program on day-to-day implementation of the control program, for the specific purpose of verifying that the measures identified in the program and other measures required to control emissions are being properly implemented.

2.7.6 Emission Limitations

a. Emissions of PM from the affected units shall not exceed 2.04 tons per year. Compliance with this limit shall be determined from the amount and type of vehicle traffic for the affected plant, appropriate emission factors and engineering calculations with appropriate USEPA methodology for estimating emissions of fugitive dust from roadways and open areas.

2.7.7 Opacity Observations

a. Upon written request by the Illinois EPA, the Permittee shall conduct opacity observations for the affected unloading/loading area in accordance with Condition 3.2.

2.7.8 Operational Monitoring Requirements

None

2.7.9 Recordkeeping Requirements

The Permittee shall maintain the following records for the affected units:

a. A file containing:

i. The Permittee’s assumptions, with supporting explanation, for the typical and maximum quantity and nature of vehicle traffic for the affected plant, including truck traffic related to the receipt of raw materials and loadout of products.

ii. The maximum PM emissions from the affected units (tons/year), with supporting calculations, based on the maximum vehicle traffic at the plant (as recorded above), the silt loading on the different classes of roadways at the plant (as measured pursuant to Condition 2.12.8), and the effectiveness of the current fugitive dust control program (as addressed in Condition 2.12.5(b).

b. Records documenting implementation of the operating programs for the affected roadways and the affected unloading/loading area, including:

i. For each cleaning of the unloading/loading area and each dust control treatment of roadways and the area: the date and time; the reason for treatment, if not routine;; the type of treatment; the identity of the treatment vehicle or equipment; and a description of any unusual observations or events related to control of dust that occurring during treatment;

ii. A log recording incidents when control measures were not carried out as scheduled or were not fully implemented and incidents when additional control measures were carried out, with description of each such incident and explanation. This log shall address any adjustments to the scheduling of control measures made by the Permittee due to weather conditions that either acted to reduce or increase the level of potential dust, such as extended periods of dry weather.

d. Records of the amount of different material received or shipped from the plant by truck (gallons or tons, by type of material).

d. Records on at least an annual basis of the PM emissions from the affected units, with supporting documentation and calculations.

2.7.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA of any deviations from the requirements of this permit for the affected units in the quarterly compliance report in accordance with Condition 3.1.

2.8 Diesel Engine

2.8.1 Description

An existing diesel-fired engine generator would be used to maintain a supply of electrical power to the plant when the plant experiences an interruption in its normal power supply.

2.8.2 List of Emission Units and Pollution Control Equipment

Process	Description	Control Equipment
Engine	Diesel-fired Engine (nominal 1676 hp)	----

2.8.3 Applicability Provisions and Applicable Regulations

a. The emission of smoke or other particulate matter from the engine shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124.

2.8.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected engine not being subject to the BACT requirement of the PSD rules because it is an existing engine that is not undergoing a physical change as part of the construction of the proposed plant.

b. This permit is issued based on the affected engine qualifying as an emergency engine as defined by 40 CFR 63, Subpart IIII.

c. This permit is issued based on the affected engine being an existing engine for purposes of the NSPS, 40 CFR 60, so that it is not subject to the control requirements of the NSPS.

2.8.5 Operational and Production Limits and Work Practices

a. The affected engine shall only be operated as an emergency engine as defined by 40 CFR 63.3375.

b. The affected engine shall not operate more than 500 hours per calendar year.

c. The sulfur content of the fuel fired in the affected engine shall not exceed 0.05 percent by weight.

Note: Because of this restriction, this permit does not address the SO2 emission standard of 35 IAC 214.301, which restricts the SO2 emissions of the affected engine to no more than 2000 ppm.

2.8.6 Emission Limitations

a. Emissions from the affected engine shall not exceed the following limits.

	Limit	
Pollutant	(Lb/Hr)	(Tons/Yr)

NO_x	40.2	10.1
CO	9.2	2.30
VOM	1.2	0.30
PM	1.2	0.29
SO_2	0.7	0.17

2.8.7 Testing Requirements

a. If the affected engine operates for more than 250 hours in a calendar year, in the next calendar year, the Permittee shall have emissions of from the affected engine measured in accordance with Condition 3.1at its expense by an approved testing service, during conditions representative of maximum operation using approved USEPA test methods and procedures,.

2.8.8 Operational Monitoring Requirements

None

2.8.9 Recordkeeping Requirements

a. The Permittee shall maintain a file for the affected engine that contains the following information:

i. Applicable emission factors for the engine, with supporting documentation, including a copy of the manufacturer’s specifications or guarantee for emissions from the engine.

ii. The maximum hourly emission rates from the engine, with supporting calculations.

b. The Permittee shall maintain records for the sulfur content of the fuel used in the affected engine (lb per million Btu), which shall be recorded for each shipment of fuel oil delivered to the plant.

c. The Permittee shall maintain the following operating operating records for the affected engine:

i. Operating hours (hours/month and hours/year).

e. The Permittee shall maintain the following log(s) or other records for the engine:

i. An operating log, in accordance with Condition 3.3(a).

ii. An inspection, maintenance and repair log, in accordance with Condition 3.3(b).

f. The Permittee shall maintain the following records related to emissions of the affected engine:

i. Records for any hour in which emissions exceeded the applicable limit.

ii. Records for the monthly and annual emissions of NO_x,

CO, PM, SO_2, and VOM from the affected engine based on fuel consumption and other operating data, and appropriate emission factors, with supporting calculations.

2.8.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the emergency engine as follows. These reports shall include the information specified in Condition 3.4.

   i. The use of fuel with a sulfur content in excess of the limit specified in Condition 2.8.5(c), with the amount such fuel used and its sulfur content.

b. The deviations addressed above and all other deviations shall be reported in the quarterly compliance report. In accordance with Condition 3.4.

SECTION 3: GENERAL REQUIREMENTS

3.1. Emission Testing Requirements

a. Within 180 days of initial startup of the affected plant, the Permittee shall have emissions of selected units as specified in the following table, measured during conditions which are representative of maximum emissions:

Emission Unit/Process	Emissions				VOM Control Efficiency
	PM	VOM***	NO_x	CO	
Process Units (Scrubber)		x			x
Reformer	X**		X*	X*	
Boiler	X**		X*	X*	

* Emissions testing for CO shall be conducted concurrently with NO_x testing.

** PM emissions testing for the reformer and boiler shall be conducted on one unit, either chosen at random or as selected by the Illinois EPA.

*** Efficiency testing need not be performed if the Permittee is demonstrating compliance based on the concentration of VOM in the exhaust.

i. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for an emission unit within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. i. The following testing methods and procedures shall be used. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter (PM)	USEPA Method 5[a] and 202[b]
Opacity	USEPA Method 9[c]
Carbon Monoxide (CO)	USEPA Method 10
Nitrogen Oxides (NO_x)	USEPA Method 7E
Volatile Organic Material (VOM)	USEPA Method 25 or 25A[d] and 18[e]

Notes:

a. For the carbon transfer system and house dust collector, for which the average stack gas temperature is less than 250°F, testing may be conducted at actual stack gas temperature without heating of the probe or filter holders.

b. Particulate matter tests shall include measurements of condensable particulate matter, as collected in the back half of the Method 5 sampling train or by separate measurements using USEPA Method 202 (40 CFR Part 51, Appendix M).

c. Observation of opacity shall be made in conjunction with measurements of PM emissions.

d. Outlet testing and control efficiency testing shall be based on either Method 25 or Method 25A calibrated to propane, whichever is applicable depending on concentration (i.e., Method 25 shall be used on both the inlet and outlet when the outlet total hydrocarbon concentration is greater than 50 ppm as carbon and Method 25A shall be used on both the inlet and outlet when the outlet THC concentration is less than 50 ppm as carbon).

e. If the composition of the VOM emission cannot be reasonably determined by process data, measurements by Method 18 shall be conducted for the purpose of determining the chemical composition of the VOM emissions.

c. The Permittee shall submit a written test plan to the Illinois EPA for review and approval for the initial testing and if a significant change in the procedures for this testing is planned from the procedures followed in the previous test. This plan shall be submitted at least 60 days prior to the actual date of testing and include the following information as a minimum:

i. A description of the planned test procedures.

ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.

iii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means or manner by which the operating parameters for the emission unit and any control equipment will be determined..

iv. The specific determinations of emissions and operation that are intended to be made, including sampling and monitoring locations.

v. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

d. The Permittee shall notify the Illinois EPA prior to conducting these measurements to enable the Illinois EPA to observe testing. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may accept shorter advance notice if it does not interfere with the Illinois EPA’s ability to observe testing.

e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized but no later than 60 days after completion of sampling. The Final Report shall include as a minimum:

i. General information, i.e., date of test, names of testing personnel, and names of Illinois EPA observers.

ii. A summary of results, e.g., PM, VOM, or CO emissions, lb/hour and gr/scf or ppmv.

iii. A detailed description of operating conditions of the emission unit(s) during testing, including:

A. Process information, e.g., type or product and operating rate.

B. Control system operating parameters during testing, e.g., flow rate and ph of scrubbant.

iv. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

vi. Conclusions.

g. The Permittee shall retain copies of emission test reports for at least three years beyond the date that an emission test is superseded by a more recent test.

3.2 Opacity Observations

a. Upon written request by the Illinois EPA, the Permittee shall conduct opacity observations for specific affected operation(s) or unit(s) within 45 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.

b. Opacity of emissions shall be determined during representative weather and operating conditions by a qualified observer in accordance with USEPA Test Method 9, as further specified below.

c. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both no more than half of the most stringent requirement applying to opacity.

d. i. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).

ii. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.

e. The Permittee shall provide a copy of its observer’s readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

f. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:

i. Date and time of testing.

ii. Name and employer of qualified observer, with a copy of his or her current certification.

iii. Description of observation condition, including recent weather.

iv. Description of the operating conditions of the affected operation or unit.

v. Opacity determinations, accompanied by raw data.

vi. Conclusions.

g. The Permittee shall retain copies of test reports for at least three years after the date that a test is superseded by a more recent test.

3.3 General Requirements for Logs

a. Operating logs required by this permit shall, at a minimum, include the following information:

i. Information identifying periods when an emission unit or group of related emission units was not in service.

ii. For periods when a unit or group of related units is in service and operating normally, relevant process information to generally confirm normal operation,

iii. For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s) and the potential consequences for additional emissions from unit(s), with explanation.

b. Inspection, maintenance and repair logs required by this permit shall, at a minimum, include the following information:

i. Identification of equipment, with date, time, responsible employee and type of activity.

ii. For inspections, a description of the inspection, findings, and any recommended actions, with reason.

iii. For maintenance and repair activity, a description of actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, and the condition of equipment following completion of the activity.

c. The logs required by this permit may be kept in manual or electronic form, and may be part of a larger information database

maintained by the Permittee provided that the information required to be kept in a log is readily accessible.

3.4 Reporting of Deviations

a. The Permittee shall include the following information in reports of deviations:

i. Identify the deviation, with date, time, duration and description.

ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.

iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.

b. i. Unless otherwise specified in a particular condition of this permit, if deviation(s) from requirements of this permit occur during a calendar quarter, compliance report shall be submitted no later than 45 days after the end of the calendar quarter. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.

ii. If there are no deviations during q calendar quarter, the Permittee shall still submit a compliance report, which report shall state that no deviations occurred during the reporting period.

c. i. For the purpose of determining whether a deviation must be reported prior to a quarterly compliance report, a deviation shall be considered to continue even if operation an emission unit is interrupted if the deviation is still present when operation of the unit is resumed.

ii. When this permit requires immediate notification, such notification shall be provided by telephone and followed by facsimile or e-mail transmittal of a narrative report.

d. Notwithstanding the provisions of this permit for reporting of deviations as or after they have occurred, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that is not otherwise accommodated by this permit, which activity is or could be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation.

Attachment 1-A: Listing of Process Emissions Units in the Glycols Plant

Type of Unit	Process Units(Vents)		Rule Applicability Control Required*	Controls
	Description	EU ID		
	Glycerin Deodorizer	DO001N	---	None
Distillation	Crude Glycerin Distillation System	DS001N	Subpart NNN	None
	Crude Glycols Distillation System	DS001S	40 CFR 63.113	Glycol Scrubber
	Alcohol/Water Distillation System	DS002S	40 CFR 63.113	Glycol Scrubber
	Water/Glycols Distillation System	DS003S	40 CFR 60 Subpart NNN	None
	PG-EG/Glycerin Distillation System	DS004S	40 CFR 60 Subpart NNN 40 CFR 63 Subpart G	None
	PG/EG Distillation System #1 Vent	DS005S	40 CFR 60 Subpart NNN	None
	BDO Glycerin Distillation System	DS006S	40 CFR 60 Subpart NNN 40 CFR 63 Subpart G	None
	Glycerin/Sorbitol Distillation System	DS007S	Subpart NNN 40CFR63 Subpart G; (63.113)	None
	PG/EG Distillation System #2	DS008S	40 CFR 63.113	Glycol Scrubber
	BDO/PG Distillation System	DS009S	40 CFR 60 Subpart NNN	None
	EG/BDO Distillation System	DS010S	40 CFR 60 Subpart NNN 40 CFR 63 Subpart G	None
	BDO/EG Distillation System	DS011S	40 CFR 60 Subpart NNN 40 CFR 63 Subpart G	None
Thin Film Evaporator	Glycerin Thin Film Evaporator	EV001N	---	None
Flash Systems	High-Pressure H2 Flash System	HF001S	40 CFR 60 Subpart RRR	None
	Low-Pressure H2 Flash System	HF002S	40 CFR 63.113	Flare
Loadout	Alcohol Loadout	ALO001	Subpart G	None
	BDO Loadout	BLO001	Subpart G	None
	EG Loadout	ELO001	Subpart G	None
	Glycerin Loadout	GLO001	Subpart G	None
	PG Loadout	PLO001	---	None

*Expected status based on design data

Attachment 1-B: Listing of Tanks in the Glycols Plant

Process Tanks	EU ID	NSPS and NESHAP Applicability	Controls
Refined Glycerin Reactor Feed Tank	TK001N	40 CFR 63 Subpart H	Conservation Vent
Crude Glycerin Storage Tank	TK002N	40 CFR 63 Subpart H	Conservation Vent
Process Work Around Tank #1	TK005N	40 CFR 63 Subpart H	Conservation Vent
Process Work Around Tank #2	TK006N	40 CFR 63 Subpart H	Conservation Vent
PG QC Tank #1	TK007N	40 CFR 63 Subpart H	Conservation Vent
PG QC Tank #2	TK008N	40 CFR 63 Subpart H	Conservation Vent
Reuse Water/City Tank #1	TK009N	40 CFR 63 Subpart H	Conservation Vent
Byproducts Tank	TK010N	40 CFR 63 Subpart H	Conservation Vent
Reuse Water/City Water Tank 2	TK011N	40 CFR 63 Subpart H	Conservation Vent
Process Work Around Tank #3	TK012N	40 CFR 63 Subpart H	Conservation Vent
Glycerin Sweet Water Tank #1	TK018N	40 CFR 63 Subpart H	Conservation Vent
Glycerin Sweet Water Tank #2	TK019N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #1	TK026N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #5	TK027N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #3	TK028N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #4	TK029N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #2	TK030N	40 CFR 63 Subpart H	Conservation Vent
BDO QC Tank #6	TK031N	40 CFR 63 Subpart H	Conservation Vent

Substandard Glycerin Holding Tank #1	TK032N	40 CFR 63 Subpart H	Conservation Vent
Substandard Glycerin Holding Tank #2	TK033N	40 CFR 63 Subpart H	Conservation Vent
Glycerin/Glycol Distillation Feed Tank	TK034N	40 CFR 63 Subpart H	Conservation Vent
PG/EG Distillation #1 Feed Tank	TK035N	40 CFR 63 Subpart H	Conservation Vent
USP Glycerin QC Tank #1	TK036N	40 CFR 63 Subpart H	Conservation Vent
USP Glycerin QC Tank #2	TK037N	40 CFR 63 Subpart H	Conservation Vent
Sorbitol Reactor Feed Tank	TK001S	40 CFR 63 Subpart H	Conservation Vent
Wastewater Tank	TK002S	40 CFR 63 Subpart H	Conservation Vent
Crude Glycols Distillation Feed Tank	TK003S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Desalting System Feed Tank	TK004S	40 CFR 63 Subpart H	Glycol Scrubber
Process Work Around Tank #4	TK005S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Alcohol/Water Distillation Feed Tank	TK006S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Glycol/Water Distillation Feed Tank	TK007S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Overflow Tank	TK008S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
PG/EG Distillation System #2 Feed Tank	TK009S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
EG/BDO Distillation Feed Tank	TK011S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
BDO/PG Distillation Feed Tank #1	TK012S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
BDO/PG Distillation Feed Tank #2	TK013S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
BDO/EG Distillation Feed Tank	TK022S	40 CFR 63 Subpart H	Conservation Vent
Glycerol/Sorbitol Distillation Feed Tank	TK023S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Blast Reactor Feed Tank	TK025S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
EG QC Tank #3	TK026S	40 CFR 63 Subpart H	Conservation Vent
EG QC Tank #4	TK027S	40 CFR 63 Subpart H	Conservation Vent
EG QC Tank #1	TK028S	40 CFR 63 Subpart H	Conservation Vent
EG QC Tank #2	TK032S	40 CFR 63 Subpart H	Conservation Vent
Alcohol QC Tank #1	TK034S	40 CFR 63 Subpart H, §63.112(e)(3)	Vent Condenser
Alcohol QC Tank #2	TK035S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Sorbitol Recycle Tank	RX023S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Glycerin Recycle Tank	RX026S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Storage Tanks			
Existing			
USP Glycerin Storage Tank #1	TK003N	40 CFR 63 Subpart H	Breather Vent
USP Glycerin Storage Tank #2	TK004N	40 CFR 63 Subpart H	Breather Vent
BDO Storage/Loadout Tank #1	TK015N	40 CFR 63 Subpart H	Breather Vent
BDO Storage/Loadout Tank #2	TK016N	40 CFR 63 Subpart H	Breather Vent
BDO Storage/Loadout Tank #3	TK017N	40 CFR 63 Subpart H, §63.112(e)(3)	Breather Vent
EG Storage/Loadout Tank	TK010S	40 CFR 63 Subpart H, §63.112(e)(3)	Glycol Scrubber
Alcohol Storage/Loadout Tank	TK024S	40 CFR 63 Subpart H, §63.112(e)(3)	Breather Vent
New			
Crude Glycerin Unloading Tank #1	TK001E	40 CFR 63 Subpart H	Breather Vent
Crude Glycerin Unloading Tank #2	TK002E	40 CFR 63 Subpart H	Breather Vent
Crude Glycerin Unloading Tank #3	TK003E	40 CFR 63 Subpart H	Breather Vent
PG Storage/Loadout Tank #1	TK004E	40 CFR 63 Subpart H	Breather Vent
PG Storage/Loadout Tank #2	TK005E	40 CFR 63 Subpart H	Breather Vent

Attachment 2A: Summary of Emissions Changes from the Project

Area	Emissions (tons/year)				
	PM/PM_{10}	VOM	NO_x	CO	SO_2
Project Emissions					
Glycols Plant	6.6/4.5	84.3	39.8	24.7	0.53
Increases at Existing Facilities[a]					
Cogeneration Boilers[b]	24.56	1.44	289.54	69.18	564.63
Carbon Furnaces	0.01	0.10	1.34	6.11	0.06
Wastewater Treatment Plant	-	1.0	-	-	-
Total Increase in Emissions	31.2/29.0	86.8	330.7	100.0	565.2

a. The increase in emissions from increased utilization of existing facilities is the difference between projected actual emissions and the baseline actual emissions, excluding changes in emissions that would have occurred without the project.

b. Maximum emissions increase associated with increased utilization of the boilers at the cogeneration plant, based on the projected maximum steam demand of the Glycols Plant, 300,000 pounds per hour.

Attachment 2B: Detailed Summary of Emissions Increases from the Project

Units	Emissions (tons/year)				
	PM/PM_{10}	NOx	SO_2	CO	VOM
Glycols Plant					
Reformer	1.75	14.02	0.21	3.50	1.75
Oil Heaters (total for 3)	1.31	15.77	0.15	18.92	1.31
Distillation Units	-	-	-	-	4.90
High & Low Pressure Flash Units	-	-	-	-	1.10
Storage & Process Tanks	-	-	-	-	7.82
Equipment Leaks	-	-	-	-	66.41
Loadout Operations	-	-	-	-	0.65
Carbon Transfer System	0.04	-	-	-	-
House Dust Collector	0.06	-	-	-	-
Cooling Tower	1.10/0.61	-	-	-	-
Emergency Engine	0.29	10.06	0.17	2.30	0.30
Subtotal	6.6/4.5	39.8	0.53	24.7	84.5
Existing Facilities					
Cogeneration Plant	24.56	289.54	564.63	69.18	1.44
Carbon Furnaces	0.01	1.34	0.06	6.11	0.10
Wastewater Treatment Plant	--	--	--	--	1.0
Roadways	2.04/0.40	--	--	--	--
Subtotal	24.6	290.9	564.7	75.3	2.54
Total Project Emissions	31.2/29.0	330.7	565.2	100.0	86.8
PSD Threshold	25/15	40	40	100	40
Significant Yes/No	Yes/Yes	Yes	Yes	Yes	Yes